REQUEST FOR PROPOSALS

FEASIBILITY STUDY FOR THE

MARITIME COORDINATION, SAFETY, AND VESSEL TRAFFIC MANAGEMENT SYSTEM PROJECT

Submission Deadline: **4:00 PM**

LOCAL TIME

NOVEMBER 19, 2010

Submission Place:

V. L. Konstantinov
Chief Engineer
RSE "AISCP"
Umirzag Village
Aktau, Kazakhstan, 466200

Phone: 7 (7292) 51-45-49
Fax: 7 (7292) 44-51-01

SEALED PROPOSALS SHALL BE CLEARLY MARKED AND RECEIVED PRIOR TO THE TIME AND DATE SPECIFIED ABOVE. PROPOSALS RECEIVED AFTER SAID TIME AND DATE WILL NOT BE ACCEPTED OR CONSIDERED.

REQUEST FOR PROPOSALS

Section 1: INTRODUCTION

The U.S. Trade and Development Agency (USTDA) has provided a grant in the amount of US$388,959 to Republican State Enterprise "Aktau International Sea Commercial Port" (the "Grantee") in accordance with a grant agreement dated August 31, 2010 (the "Grant Agreement"). This Grant would fund a feasibility study (the "Feasibility Study") for a proposed Maritime Coordination, Safety, and Vessel Traffic Management System (the "Project") in Kazakhstan (the "Host Country"). The Grant Agreement is attached at Annex 4 for reference. The Grantee is soliciting technical proposals from qualified U.S. firms to provide expert consulting services to perform the Feasibility Study.

1.1 BACKGROUND SUMMARY

The Caspian Sea is a vital waterway for transportation and commerce for Kazakhstan, and it is being developed as a major oil transit route from Central Asia to the West. Due to the increasing amount of sea traffic on the Caspian, it has become very important for Kazakhstan to be able to keep track of where ships are within the portion of the Caspian controlled by Kazakhstan, and direct ship traffic in order to reduce the possibility of collisions between vessels and collisions of vessels with structures such as offshore oil rigs.

Kazakh crude oil currently is shipped in limited amounts of approximately 150,000 barrels per day across the Caspian Sea from the Port of Aktau to Azerbaijan. Over the next 9 years, however, Kazakhstan is expected to dramatically increase oil production, from its current capacity of approximately 70 million tons per year to an estimated 120 million tons per year by 2019.

The Government of Kazakhstan has prioritized the development of the Kazakhstan Azerbaijan Caspian Transportation System (KACTS) to ensure that Kazakh oil can be exported effectively. Initially, KACTS is expected to allow Kazakhstan to deliver approximately 500,000 barrels of oil per day directly to Azerbaijan via surface shipments across the Caspian Sea for onward transmission through the Baku-Tbilisi-Ceyhan and Baku-Supsa pipelines. The volume is expected to increase to approximately 750,000 to 1.2 million barrels per day when KACTS is fully operational.

Initial groundwork for the development of KACTS has already begun. In November 2008, KazMunaiGas (KMG) and the State Oil Company of Azerbaijan (SOCAR) signed an agreement on the core principles of KACTS. The two national oil companies agreed to set up a joint venture that will manage all aspects of the project. The IOCs currently are negotiating with KMG and SOCAR in order to take an equity stake in KACTS.

The Port of Aktau intends to install a maritime coordination, safety, and vessel traffic management center, to be called a Marine Safety Traffic Control Center, in order to assist in its operations and help ensure maritime safety. This center would include three components: (1) a vessel traffic control system for Aktau port, (2) an automatic long-range identification system

(commonly called LRIT or long range identification and tracking in the industry), and (3) a regional rescue operations management system (incorporating search and rescue capabilities). The vessel traffic control system, commonly called VTMS or vessel traffic management systems, would include a shore-side installation that would provide a range of information to ships from simple messages concerning the position of other traffic or meteorological hazards to extensive management of traffic within a port or waterway. LRIT systems provide tracking of any participating ship (which is required for all passenger ships and cargo ships over 300 gross tons) through acquisition onshore of positional and identification data being transmitted from ships. These systems would improve the port's operational efficiency through the management of vessel entry and departure, and shorten the berthing time of vessels by providing real time information on port operation. The use of VTMS also reduces the risk of vessel collisions, including collisions of oil tankers that can cause oil spills.

Excerpts from a background Definitional Mission report are provided for reference in Annex 2.

1.2 OBJECTIVE

This study is to examine the feasibility of developing a maritime coordination center in Aktau and to develop technical specifications for such a center. The center includes three components: a vessel traffic management system (VTMS), a long-range identification and tracking (LRIT) system, and a search and rescue center (SAR). These specifications are required before these components can be procured. The study comprises the tasks described in these Terms of Reference (TOR). The Terms of Reference (TOR) for this Feasibility Study are attached as Annex 5.

1.3 PROPOSALS TO BE SUBMITTED

Technical proposals are solicited from interested and qualified U.S. firms. The administrative and technical requirements as detailed throughout the Request for Proposals (RFP) will apply. Specific proposal format and content requirements are detailed in Section 3.

The amount for the contract has been established by a USTDA grant of US$388,959. **The USTDA grant of $US388,959 is a fixed amount. Accordingly, COST will not be a factor in the evaluation and therefore, cost proposals should not be submitted**. Upon detailed evaluation of technical proposals, the Grantee shall select one firm for contract negotiations.

1.4 CONTRACT FUNDED BY USTDA

In accordance with the terms and conditions of the Grant Agreement, USTDA has provided a grant in the amount of US$388,959 to the Grantee. The funding provided under the Grant Agreement shall be used to fund the costs of the contract between the Grantee and the U.S. firm selected by the Grantee to perform the TOR. The contract must include certain USTDA Mandatory Contract Clauses relating to nationality, taxes, payment, reporting, and other matters. The USTDA nationality requirements and the USTDA Mandatory Contract Clauses are attached at Annexes 3 and 4, respectively, for reference.

Section 2: INSTRUCTIONS TO OFFERORS

2.1 PROJECT TITLE

The project is called the Kazakhstan Maritime Coordination, Safety, and Vessel Traffic Management System Feasibility Study.

2.2 DEFINITIONS

Please note the following definitions of terms as used in this RFP.

The term "Request for Proposals" means this solicitation of a formal technical proposal, including qualifications statement.
The term "Offeror" means the U.S. firm, including any and all subcontractors, which responds to the RFP and submits a formal proposal and which may or may not be successful in being awarded this procurement.

2.3 DEFINITIONAL MISSION REPORT

USTDA sponsored a Definitional Mission to address technical, financial, sociopolitical, environmental and other aspects of the proposed project. Excerpts of the report are attached at Annex 2 for background information only. Please note that the TOR referenced in the report are included in this RFP as Annex 5.

2.4 EXAMINATION OF DOCUMENTS

Offerors should carefully examine this RFP. It will be assumed that Offerors have done such inspection and that through examinations, inquiries and investigation they have become familiarized with local conditions and the nature of problems to be solved during the execution of the Feasibility Study.

Offerors shall address all items as specified in this RFP. Failure to adhere to this format may disqualify an Offeror from further consideration.

Submission of a proposal shall constitute evidence that the Offeror has made all the above mentioned examinations and investigations, and is free of any uncertainty with respect to conditions which would affect the execution and completion of the Feasibility Study.

2.5 PROJECT FUNDING SOURCE

The Feasibility Study will be funded under a grant from USTDA. The total amount of the grant is not to exceed US$388,959.

2.6 RESPONSIBILITY FOR COSTS

Offeror shall be fully responsible for all costs incurred in the development and submission of the proposal. Neither USTDA nor the Grantee assumes any obligation as a result of the issuance of this RFP, the preparation or submission of a proposal by an Offeror, the evaluation of proposals, final selection or negotiation of a contract.

2.7 TAXES

Offerors should submit proposals that note that in accordance with the USTDA Mandatory Contract Clauses, USTDA grant funds shall not be used to pay any taxes, tariffs, duties, fees or other levies imposed under laws in effect in the Host Country.

2.8 CONFIDENTIALITY

The Grantee will preserve the confidentiality of any business proprietary or confidential information submitted by the Offeror, which is clearly designated as such by the Offeror, to the extent permitted by the laws of the Host Country.

2.9 ECONOMY OF PROPOSALS

Proposal documents should be prepared simply and economically, providing a comprehensive yet concise description of the Offeror's capabilities to satisfy the requirements of the RFP. Emphasis should be placed on completeness and clarity of content.

2.10 OFFEROR CERTIFICATIONS

The Offeror shall certify (a) that its proposal is genuine and is not made in the interest of, or on behalf of, any undisclosed person, firm, or corporation, and is not submitted in conformity with, and agreement of, any undisclosed group, association, organization, or corporation; (b) that it has not directly or indirectly induced or solicited any other Offeror to put in a false proposal; (c) that it has not solicited or induced any other person, firm, or corporation to refrain from submitting a proposal; and (d) that it has not sought by collusion to obtain for itself any advantage over any other Offeror or over the Grantee or USTDA or any employee thereof.

2.11 CONDITIONS REQUIRED FOR PARTICIPATION

Only U.S. firms are eligible to participate in this tender. However, U.S. firms may utilize subcontractors from the Host Country for up to 20 percent of the amount of the USTDA grant for specific services from the TOR identified in the subcontract. USTDA's nationality requirements, including definitions, are detailed in Annex 3.

2.12 LANGUAGE OF PROPOSAL

All proposal documents shall be prepared and submitted in English and in Russian

2.13 PROPOSAL SUBMISSION REQUIREMENTS

The **Cover Letter** in the proposal must be addressed to:

V. L. Konstantinov
Chief Engineer
RSE "AISCP"
Umirzag Village
Aktau, Kazakhstan, 466200

An Original and (4) four English copies plus (4) four Russian copies of your proposal must be received at the above address no later than 4:00 PM, on NOVEMBER 19, 2010.

Proposals may be either sent by mail, overnight courier, or hand-delivered. Whether the proposal is sent by mail, courier or hand-delivered, the Offeror shall be responsible for actual delivery of the proposal to the above address before the deadline. Any proposal received after the deadline will be returned unopened. The Grantee will promptly notify any Offeror if its proposal was received late. Electronically submitted proposals will not be accepted.

Upon timely receipt, all proposals become the property of the Grantee.

2.14 PACKAGING

The original and each copy of the proposal must be sealed to ensure confidentiality of the information. The proposals should be individually wrapped and sealed, and labeled for content including "original" or "copy number x"; the original and eight (8) copies should be collectively wrapped and sealed, and clearly labeled.

Neither USTDA nor the Grantee will be responsible for premature opening of proposals not properly wrapped, sealed and labeled.

2.15 AUTHORIZED SIGNATURE

The proposal must contain the signature of a duly authorized officer or agent of the Offeror empowered with the right to bind the Offeror.

2.16 EFFECTIVE PERIOD OF PROPOSAL

The proposal shall be binding upon the Offeror for NINETY (90) days after the proposal due date, and Offeror may withdraw or modify this proposal at any time prior to the due date upon written request, signed in the same manner and by the same person who signed the original proposal.

2.17 EXCEPTIONS

All Offerors agree by their response to this RFP announcement to abide by the procedures set forth herein. No exceptions shall be permitted.

2.18 OFFEROR QUALIFICATIONS

As provided in Section 3, Offerors shall submit evidence that they have relevant past experience and have previously delivered advisory, feasibility study and/or other services similar to those required in the TOR, as applicable.

2.19 RIGHT TO REJECT PROPOSALS

The Grantee reserves the right to reject any and all proposals.

2.20 PRIME CONTRACTOR RESPONSIBILITY

Offerors have the option of subcontracting parts of the services they propose. The Offeror's proposal must include a description of any anticipated subcontracting arrangements, including the name, address, and qualifications of any subcontractors. USTDA nationality provisions apply to the use of subcontractors and are set forth in detail in Annex 3. The successful Offeror shall cause appropriate provisions of its contract, including all of the applicable USTDA Mandatory Contract Clauses, to be inserted in any subcontract funded or partially funded by USTDA grant funds.

2.21 AWARD

The Grantee shall make an award resulting from this RFP to the best qualified Offeror, on the basis of the evaluation factors set forth herein. The Grantee reserves the right to reject any and all proposals received and, in all cases, the Grantee will be the judge as to whether a proposal has or has not satisfactorily met the requirements of this RFP.

2.22 COMPLETE SERVICES

The successful Offeror shall be required to (a) provide local transportation, office space and secretarial support required to perform the TOR if such support is not provided by the Grantee; (b) provide and perform all necessary labor, supervision and services; and (c) in accordance with best technical and business practice, and in accordance with the requirements, stipulations, provisions and conditions of this RFP and the resultant contract, execute and complete the TOR to the satisfaction of the Grantee and USTDA.

2.23 INVOICING AND PAYMENT

Deliverables under the contract shall be delivered on a schedule to be agreed upon in a contract with the Grantee. The Contractor may submit invoices to the designated Grantee Project Director in accordance with a schedule to be negotiated and included in the contract. After the Grantee's approval of each invoice, the Grantee will forward the invoice to USTDA. If all of the requirements of USTDA's Mandatory Contract Clauses are met, USTDA shall make its respective disbursement of the grant funds directly to the U.S. firm in the United States. All payments by USTDA under the Grant Agreement will be made in U.S. currency. Detailed provisions with respect to invoicing and disbursement of grant funds are set forth in the USTDA Mandatory Contract Clauses attached in Annex 4.

Section 3: PROPOSAL FORMAT AND CONTENT

To expedite proposal review and evaluation, and to assure that each proposal receives the same orderly review, all proposals must follow the format described in this section.

Proposal sections and pages shall be appropriately numbered and the proposal shall include a Table of Contents. Offerors are encouraged to submit concise and clear responses to the RFP. Proposals shall contain all elements of information requested without exception. Instructions regarding the required scope and content are given in this section. The Grantee reserves the right to include any part of the selected proposal in the final contract.

The proposal shall consist of a technical proposal only. A cost proposal is NOT required because the amount for the contract has been established by a USTDA grant of US$388,959, which is a fixed amount.

Offerors shall submit one (1) original and eight (8) copies of the proposal. Proposals received by fax cannot be accepted.

Each proposal must include the following:

Transmittal Letter,
Cover/Title Page,
Table of Contents,
Executive Summary,
Company Information,
Organizational Structure, Management Plan, and Key Personnel,
Technical Approach and Work Plan, and
Experience and Qualifications.

Detailed requirements and directions for the preparation of the proposal are presented below.

3.1 EXECUTIVE SUMMARY

An Executive Summary should be prepared describing the major elements of the proposal, including any conclusions, assumptions, and general recommendations the Offeror desires to make. Offerors are requested to make every effort to limit the length of the Executive Summary to no more than five (5) pages.

3.2 COMPANY INFORMATION

For convenience, the information required in this Section 3.2 may be submitted in the form attached in Annex 6 hereto.

3.2.1 Company Profile

Provide the information listed below relative to the Offeror's firm. If the Offeror is proposing to subcontract some of the proposed work to another firm(s), the information below must be provided for each subcontractor.

1. Name of firm and business address (street address only), including telephone and fax numbers.

2. Year established (include predecessor companies and year(s) established, if appropriate).

3. Type of ownership (e.g. public, private or closely held).

4. If private or closely held company, provide list of shareholders and the percentage of their ownership.

5. List of directors and principal officers (President, Chief Executive Officer, Vice-President(s), Secretary and Treasurer; provide full names including first, middle and last). Please place an asterisk (*) next to the names of those principal officers who will be involved in the Feasibility Study.

6. If Offeror is a subsidiary, indicate if Offeror is a wholly-owned or partially-owned subsidiary. Provide the information requested in items 1 through 5 above for the Offeror's parent(s).

7. Project Manager's name, address, telephone number, e-mail address and fax number .

3.2.2 Offeror's Authorized Negotiator

Provide name, title, address, telephone number, e-mail address and fax number of the Offeror's authorized negotiator. The person cited shall be empowered to make binding commitments for the Offeror and its subcontractors, if any.

3.2.3 Negotiation Prerequisites

1. Discuss any current or anticipated commitments which may impact the ability of the Offeror or its subcontractors to complete the Feasibility Study as proposed and reflect such impact within the project schedule.

2. Identify any specific information which is needed from the Grantee before commencing contract negotiations.

3.2.4 Offeror's Representations

If any of the following representations cannot be made, or if there are exceptions, the Offeror must provide an explanation.

1. Offeror is a corporation *[insert applicable type of entity if not a corporation]* duly organized, validly existing and in good standing under the laws of the State of _____. The Offeror has all the requisite corporate power and authority to conduct its business as presently conducted, to submit this proposal, and if selected, to execute and deliver a contract to the Grantee for the performance of the Feasibility Study. The Offeror is not debarred, suspended, or to the best of its knowledge or belief, proposed for debarment, or ineligible for the award of contracts by any federal or state governmental agency or authority. The Offeror has included, with this proposal, a certified copy of its Articles of Incorporation, and a certificate of good standing issued within one month of the date of its proposal by the State of _____.

2. Neither the Offeror nor any of its principal officers have, within the three-year period preceding this RFP, been convicted of or had a civil judgment rendered against them for: commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a federal, state or local government contract or subcontract; violation of federal or state antitrust statutes relating to the submission of offers; or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, tax evasion, violating federal or state criminal tax laws, or receiving stolen property.

3. Neither the Offeror, nor any of its principal officers, is presently indicted for, or otherwise criminally or civilly charged with, commission of any of the offenses enumerated in paragraph 2 above.

4. There are no federal or state tax liens pending against the assets, property or business of the Offeror. The Offeror, has not, within the three-year period preceding this RFP, been notified of any delinquent federal or state taxes in an amount that exceeds $3,000 for which the liability remains unsatisfied. Taxes are considered delinquent if (a) the tax liability has been fully determined, with no pending administrative or judicial appeals; and (b) a taxpayer has failed to pay the tax liability when full payment is due and required.

5. The Offeror has not commenced a voluntary case or other proceeding seeking liquidation, reorganization or other relief with respect to itself or its debts under any bankruptcy, insolvency or other similar law. The Offeror has not had filed against it an involuntary petition under any bankruptcy, insolvency or similar law.

The selected Offeror shall notify the Grantee and USTDA if any of the representations included in its proposal are no longer true and correct at the time of its entry into a contract with the Grantee. USTDA retains the right to request an updated certificate of good standing from the selected Offeror.

3.3 ORGANIZATIONAL STRUCTURE, MANAGEMENT, AND KEY PERSONNEL

Describe the Offeror's proposed project organizational structure. Discuss how the project will be managed including the principal and key staff assignments for this Feasibility Study. Identify the Project Manager who will be the individual responsible for this project. The Project Manager shall have the responsibility and authority to act on behalf of the Offeror in all matters related to the Feasibility Study.

Provide a listing of personnel (including subcontractors) to be engaged in the project, including both U.S. and local subcontractors, with the following information for key staff: position in the project; pertinent experience, curriculum vitae; other relevant information. If subcontractors are to be used, the Offeror shall describe the organizational relationship, if any, between the Offeror and the subcontractor.

A manpower schedule and the level of effort for the project period, by activities and tasks, as detailed under the Technical Approach and Work Plan shall be submitted. A statement confirming the availability of the proposed project manager and key staff over the duration of the project must be included in the proposal.

3.4 TECHNICAL APPROACH AND WORK PLAN

Describe in detail the proposed Technical Approach and Work Plan (the "Work Plan"). Discuss the Offeror's methodology for completing the project requirements. Include a brief narrative of the Offeror's methodology for completing the tasks within each activity series. Begin with the information gathering phase and continue through delivery and approval of all required reports.

Prepare a detailed schedule of performance that describes all activities and tasks within the Work Plan, including periodic reporting or review points, incremental delivery dates, and other project milestones.

Based on the Work Plan, and previous project experience, describe any support that the Offeror will require from the Grantee. Detail the amount of staff time required by the Grantee or other participating agencies and any work space or facilities needed to complete the Feasibility Study.

3.5 SECTION 5: EXPERIENCE AND QUALIFICATIONS

Provide a discussion of the Offeror's experience and qualifications that are relevant to the objectives and TOR for the Feasibility Study. If a subcontractor(s) is being used, similar information must be provided for the prime and each subcontractor firm proposed for the project. The Offeror shall provide information with respect to relevant experience and qualifications of key staff proposed. The Offeror shall include letters of commitment from the individuals proposed confirming their availability for contract performance.

As many as possible but not more than six (6) relevant and verifiable project references must be provided for the Offeror and any subcontractor, including the following information:

Project name,
Name and address of client (indicate if joint venture),
Client contact person (name/ position/ current phone and fax numbers),
Period of Contract,
Description of services provided,
Dollar amount of Contract, and
Status and comments.

Offerors are strongly encouraged to include in their experience summary primarily those projects that are similar to or larger in scope than the Feasibility Study as described in this RFP.

Section 4: AWARD CRITERIA

Individual proposals will be initially evaluated by a Procurement Selection Committee of representatives from the Grantee. The Committee will then conduct a final evaluation and completion of ranking of qualified Offerors. The Grantee will notify USTDA of the best qualified Offeror, and upon receipt of USTDA's no-objection letter, the Grantee shall promptly notify all Offerors of the award and negotiate a contract with the best qualified Offeror. If a satisfactory contract cannot be negotiated with the best qualified Offeror, negotiations will be formally terminated. Negotiations may then be undertaken with the second most qualified Offeror and so forth.

The selection of the Contractor will be based on the following criteria:

1. **Technical Experience (50 points):** Firm and team experience in feasibility studies on, or management of implementation of, similar projects involving vessel traffic management systems, LRIT systems, and/or search and rescue centers. This should include a demonstrated understanding of International Maritime Organization regulations and requirements, as well as other international standard maritime safety requirements. In addition, experience working on marine vessels will be considered valuable.

2. **Work Plan and Methodology (25 points):** Adequacy of the proposed work plan and suggested overall approach in responding to the Terms of Reference. Soundness and thoroughness of the technical approach and work plan detailed in the proposal and the overall quality of the presentation should be evaluated. The proposal should provide an organization chart of key personnel with their qualifications and a staffing schedule for each key activity.

3. **Maritime Bidding Documentation (10 points):** Firm and team experience in developing bidding documents for maritime and port infrastructure, particularly for vessel traffic management systems, search and rescue centers and maritime coordination centers with LRIT capability. Demonstrated experience with international competitive bidding and the requirements of multilateral lending institutions is preferred.

4. **Regional Experience (15 points):** Firm and team's familiarity with the maritime sector in the Caspian, particularly in Kazakhstan, including local and international conditions, regulations and requirements.

Proposals that do not include all requested information may be considered non-responsive.

Price will not be a factor in contractor selection.

ANNEX 1

V. L. KONSTANTINOV, CHIEF ENGINEER, RSE "AISCP", UMIRZAG VILLAGE, AKTAU, KAZAKHSTAN, 466200, +7 (7292) 51-45-49

B –KAZKAHSTAN: MARITIME COORDINATION, SAFETY, AND VESSEL TRAFFIC MANAGEMENT SYSTEM PROJECT

POC Nina Patel, USTDA, 1000 Wilson Boulevard, Suite 1600, Arlington, VA 22209-3901, Tel: (703) 875-4357, Fax: (703) 875-4009. KAZKAHSTAN: MARITIME COORDINATION, SAFETY, AND VESSEL TRAFFIC MANAGEMENT SYSTEM PROJECT. The Grantee invites submission of qualifications and proposal data (collectively referred to as the "Proposal") from interested U.S. firms which are qualified on the basis of experience and capability to develop a feasibility study to:

1. Perform an analysis of the current navigation status, intensity of marine traffic, and potential rate of risks and accidents around the Port of Aktau;
2. Justify the necessity and feasibility of establishing a Marine Safety Traffic Control Center for the Kazakhstan sector of the Caspian;
3. Determine the requirements and technical specifications for establishing a Maritime Coordination, Safety, and Vessel Traffic Management Center at the Port of Aktau for the Kazakhstan sector of the Caspian;
4. Prepare Terms of Reference for the project to establish a Marine Coordination, Safety, and Vessel Traffic Management Center at the Port of Aktau for the Kazakhstan Sector of the Caspian. This Terms of Reference shall be in accordance with the document of the Republic of Kazakhstan SP RK 1.02-21-2007 "Rules for drafting, review, approval, and scope of feasibility studies for construction." This document establishes procedures for the development of a feasibility study for construction of new, or modification of existing facilities, and is required for use by all entities which are conducting construction activity in the territory of the Republic of Kazakhstan.

The port is run by the Republican State Enterprise "Aktau International Sea Commercial Port" (Port of Aktau), a state-owned company. The Kazakh Minister of Transport and Communications and the Committee Chairman of the Kazakh Ministry of Transport and Communications' Transport and Railways Committee have assigned the Port of Aktau the responsibility for projects intended to improve the safety of navigation at sea. The Port of Aktau intends to install a maritime coordination, safety, and vessel traffic management center, to be called a Marine Safety Traffic Control Center, in order to assist in its operations and help ensure maritime safety.

The U.S. firm selected will be paid in U.S. dollars from a $388,959 grant to the Grantee from the U.S. Trade and Development Agency (USTDA).

A detailed Request for Proposals (RFP), which includes requirements for the Proposal, the Terms of Reference, and a background definitional mission report are available from USTDA, at 1000 Wilson Boulevard, Suite 1600, Arlington, VA 22209-3901. To request the RFP in PDF format, please go to: https://www.ustda.gov/USTDA/FedBizOpps/RFP/rfpform.asp. Requests for a mailed hardcopy version of the RFP may also be faxed to the IRC, USTDA at 703-875-4009. In the fax, please include your firm's name, contact person, address, and telephone number. Some

firms have found that RFP materials sent by U.S. mail do not reach them in time for preparation of an adequate response. Firms that want USTDA to use an overnight delivery service should include the name of the delivery service and your firm's account number in the request for the RFP. Firms that want to send a courier to USTDA to retrieve the RFP should allow one hour after faxing the request to USTDA before scheduling a pick-up. Please note that no telephone requests for the RFP will be honored. Please check your internal fax verification receipt. Because of the large number of RFP requests, USTDA cannot respond to requests for fax verification. Requests for RFPs received before 4:00 PM will be mailed the same day. Requests received after 4:00 PM will be mailed the following day. Please check with your courier and/or mail room before calling USTDA.

Only U.S. firms and individuals may bid on this USTDA financed activity. Interested firms, their subcontractors and employees of all participants must qualify under USTDA's nationality requirements as of the due date for submission of qualifications and proposals and, if selected to carry out the USTDA-financed activity, must continue to meet such requirements throughout the duration of the USTDA-financed activity. All goods and services to be provided by the selected firm shall have their nationality, source and origin in the U.S. or host country. The U.S. firm may use subcontractors from the host country for up to 20 percent of the USTDA grant amount. Details of USTDA's nationality requirements and mandatory contract clauses are also included in the RFP.

Interested U.S. firms should submit their Proposal in English and in Russian directly to the Grantee by 4:00 PM, NOVEMBER 19, 2010 at the above address. Evaluation criteria for the Proposal are included in the RFP. Requests for clarification on any aspect of the RFP should be directed to POC Nina Patel, USTDA, 1000 Wilson Boulevard, Suite 1600, Arlington, VA 22209-3901, Tel: (703) 875-4357, Fax: (703) 875-4009. Any such request must be received no later than 4:00 PM, NOVEMBER 19, 2010 in order to be .honored. Price will not be a factor in contractor selection, and therefore, cost proposals should NOT be submitted. The Grantee reserves the right to reject any and/or all Proposals. The Grantee also reserves the right to contract with the selected firm for subsequent work related to the project. The Grantee is not bound to pay for any costs associated with the preparation and submission of Proposals

ANNEX 2

DEFINITIONAL MISSION REPORT
ON KAZAKSTAN MARITIME VESSEL TRAFFIC SYSTEM
FINAL

1. EXECUTIVE SUMMARY

The United States Trade and Development Agency (USTDA) is considering providing funds to support a maritime vessel traffic system/port security project for the Government of Kazakhstan

USTDA selected Infotel International to perform a definitional mission (DM) to identify projects that would be eligible for USTDA funding. The DM consultant traveled to Kazakhstan, discussed ports projects, project plans and budget with Kazakhstani officials and those of the U.S. Embassy. During the discussions with the officials at the port of Aktau, and due to the increasing oil traffic in the Caspian Sea beyond Kazakhstan's sea border and the need to improve Kazakhstan's maritime search and rescue capabilities, the DM consultant found that the maritime sector needs more assistance than maritime vessel traffic system / port security project. The port of Aktau needs additionally to build a Safe Marine Traffic Control Center at the port. Based on this finding, the DM consultant identified one project that would qualify for USTDA assistance. The project is to procure, design, and install a Safe Marine Traffic Control Center in Aktau. This center includes three components: (1) a vessel traffic system (VTS), (2) long range identification and tracking (LRIT) system, and (3) search and rescue (SAR) capabilities. The center would provide short range and long-range vessel traffic monitoring and security. The technical assistance is to develop a feasibility study for the Safe Marine Traffic Control Center. The port of Aktau submitted a request to USTDA to fund a feasibility study to develop technical specifications for the procurement of the Safe Marine Traffic Control Center. Based on the discussions with officials of the port of Aktau and U.S. Embassy in Astana, the DM consultant reviewed this request, evaluated the projects' concept, and developed a scope of work and budgetary estimate for the feasibility study. In evaluating the port of Aktau's request, we find:

1. The project represents a development priority for Kazakhstan. This is made clear in order No. 50/2008 of the Minister of Transport and Communications, entitled "Realization of plan of actions for fulfillment of Program of development of maritime transport in Republic of Kazakhstan for 2006 - 2012."

2. Order No. 048P/2008 of the Committee Chairman of Transport and Railways in Kazakhstan assigned the port of Aktau as responsible for realization of budget financing for projects intended to improve the safety of navigation and of life at sea.

3. The project sponsor submitted a formal request to USTDA. The port stated in the request to USTDA that the establishment of a Safe Marine Traffic Control Centre in Aktau port is required.
4. The U.S. Embassy in Kazakhstan showed great interest in USTDA's participation.
5. The project would provide substantial developmental impact in several areas, including, infrastructure, market-oriented reform, human capacity building, and technology transfer and productivity improvement.

6. The estimated export potential for this project is $11.60 million. The project represents an opportunity for sales of U.S. goods or services that is many times greater than the cost of USTDA's assistance.
7. The project would likely have a positive environmental impact, by helping to improve response to oil spills and reducing the risk of marine disasters.
8. According to port of Aktau officials, project financing would be available through port revenues, which are not tied to a foreign country.
9. The procurement process is open to U.S. firms. The project sponsor showed great interest in U.S. products and services. The proposed feasibility study will provide the project sponsor with procurement specification open to the U.S. market. Two U.S. Companies expressed their interest in this project.
10. The project will generate strong competition from several European companies, which benefit from the fact that imports from the European Union (EU) are now mostly exempt from import duties, resulting in a considerable pricing advantage.
11. The port of Aktau requested assistance in the areas of (1) vessel traffic services, (2) long-range identification and tracking (LRIT) capability, and (3) search and rescue (SAR) in the Caspian Sea. The feasibility study would introduce U.S. advanced VTS, LRIT, and SAR technologies to the port of Aktau and maritime users.
12. The feasibility study would define the requirements and develop technical and procurement specifications.

Based on the above findings, Infotel International recommends that USTDA approve a grant of $406,959 to fund the estimated cost for the feasibility study.

2. BACKGROUND

2.1 TRAFFIC IN THE CASPIAN SEA

The Caspian Sea is a vital waterway for transportation and commerce for Kazakhstan, and is a major transit point for oil to move from Central Asia to the West. There are currently 100,000 bbl/d of oil being shipped across the Caspian.

The following table depicts the statistics and forecast of cargo traffic at the port of Aktau, in thousand tons:

Year	Oil	Dry Cargo	Total
2003	6,971	1,109	8,080
2004	8,289	1,402	9,691
2005	8,913	1,456	10,369
2006	9,960	1,545	11,505
2009	11,307	2,643	13,951
2010*	14,000	2,651	16,651
2015*	15,000	4,940	19,940
Source: Aktau International Sea Commercial Port *Estimates Source: Feasibility Study, Scott Wilson, London, UK, 2009			

2.2 THE NEED FOR VESSEL TRAFFIC SERVICES

During the past thirty years there has been a considerable increase in the number of merchant

ships, and the greatest increase has been in large ships. The result is that more ships and larger ships are congesting coastal waters and ports as well as requiring greater maneuvering room at sea. Consequently ships are inevitably exposed to the risk of a collision at sea. Some reports indicate that many marine casualties could be attributed to navigational faults (i.e., systemic errors) or human error, most of the latter being by ships' duty officers who incorrectly judged ship movement or the surrounding environment. For improvement of navigation safety and reduction of potential environmental pollution, vessel traffic services have been gradually established in many large ports and congested coastal waters in the world to help ships to avoid navigational errors. More than 400 of these services have been established in approximately 50 countries. Examples of neighboring countries that installed modern VTS are Turkey (the straits of Dardanelles and Bosporus), and Russia (Port of Makhachkala, on the Caspian Sea; Port of Astrakhan, on the Volga River and Port of Tuapse, on the Black Sea). Due to the increasing amount of sea traffic on the Caspian, it has become vitally important from a safety viewpoint that Azerbaijan is able to keep track of where ships are within its sea borders and direct traffic to reduce the risk of collisions between vessels and with structures such as offshore oilrigs. This need will be greater with the further increase of traffic due to the implementation of the Kazakhstan Caspian Transportation System (KCTS) project.

The International Maritime Organization's (IMO) Guidelines define vessel traffic services as follows:

Vessel traffic services are those services "implemented by a competent authority, designed to improve safety and efficiency of traffic and the protection of the environment." These services "may range from the provision of simple information messages to extensive management of traffic within a port or waterway." Therefore vessel traffic services are a combination of personnel, operational procedures, equipment, and regulations for the purpose of maritime traffic management in a specific water area. Generally one or more of the following services is provided: information service, navigational assistance, and traffic organization service.

To implement these services, the vessel traffic *system* (VTS) uses very-high-frequency (VHF) radiotelephone communication and shore-based radar to identify ships and their movements. In accordance with VTS operational procedure, when a ship navigates into the VTS area, the ship's officer must report the ship's name, position and voyage information to the VTS center by VHF radiotelephone. The center immediately identifies the ship on the radar screen and starts to monitor her movements until the ship completely berths or leaves the area. During her voyage the Safe Marine Traffic Control Center provides navigational information to the ship. Examples include meteorological conditions in the area; the movements of shipping, including fishing ships, and the availability of resources such as tugs, pilots and berths. In case any navigational risk to the ship has been monitored, the center transmits a warning or advice regarding the risk to the ship in time for the ship to take corrective action. Therefore monitoring the progress of a vessel in the area served by a VTS has to be done with radar tracking and voice reporting.

After ships are identified by means of VHF radiotelephone calls, their radar echoes can be identified. After automatic radar plotting aids (ARPA) were developed and installed on board ships in the 1980s, the course and speed of target ships on radar screens could be easily and

accurately measured. This function also makes monitoring ships' movements convenient for VTS operators. Thus ARPA have become necessary equipment for surveillance, and their output data are correlated with electronic navigational charts by computer processors in modern vessel traffic systems. Although navigational risk can be clearly detected on displays in a VTS center due to the effectiveness of using ARPA, the identification of ships by VHF radiotelephone calls can occasionally be less precise. This can be due to mistakes in ship identification, the lack of a call from a ship; a ship's not being in compliance with the requirements, etc. Such errors can create potentially dangerous situations and decrease the functionality of the VTS. Similar problems are also a concern to the shipping industry. The VTS could have possibly prevented many maritime collisions if the encountering ships had identified each other and had had good communication between the ships.

In early 1990 some maritime countries developed a new technique called the automatic identification system (AIS), which provides automatic transmission and acquisition of ship data and navigational status. Ships equipped with AIS could benefit from better information for assessment of dangerous situations. Gradually the AIS have been accepted as an important installation to provide modern communication and identification systems for ships. The two-way communication provided by AIS between ships would obviously reduce navigational faults. Thus IMO amended the 1974 Safety of Life at Sea (SOLAS) convention in 2000. Since 1 July 2008, AIS had to be installed on all ships with gross tonnage of more than 300 tons.

Virtually, all commercial ships moving within port waters are the primary users of vessel traffic systems, and are now fitted with AIS. In general, data received via AIS can enhance the quality of the information available. This is helpful in improving traffic management and navigational safety. The International Association of Lighthouse Authorities (IALA) also suggests the installation of the AIS in vessel traffic systems so that they can receive AIS signals to identify ships' names and obtain navigational-status information in addition to that provided by VHF communications. After AIS is fitted in the VTS, operators can obtain ship movement information from ARPA or AIS, and all the information is useful for VTS traffic management, but most of the content of both sets of data are different except for ship course, speed and position. The method of receiving the data in the two types of equipment also is quite different.

For the requirements of VTS functions, both ARPA and AIS equipment can provide accurate positions of detected target ships. AIS can detect a larger number of targets without considering shadow effects and can provide more voyage information to the maritime coordination center. The ARPA system can detect targets accurately (even ones as small as buoys or rocks), regardless of a ship's size or the equipment with which it is fitted. One of the major purposes for a VTS is to prevent ships from collision, including a ship colliding with a fishing boat or a buoy. Sometimes fishing boats are working in a fairway, obstructing ships movements and increasing navigational risk. These kinds of situations cannot be detected from AIS information so that the VTS cannot a sound collision warning. Therefore AIS cannot replace ARPA in VTS operations. Although ARPA still has deficiencies in its characteristics for VTS requirements, some deficiency can be improved. For example, installing additional radar can reduce shadow effect, lessen the blind area and increase the coverage of area and the number of target ships. As for ship identity and voyage information, AIS can be used in the maritime coordination center as an auxiliary installation for these

functions. Therefore it is recommended that when a ship is within 20 miles, it is necessary to identify her name and receive more information by AIS. VTS operators have to watch the ARPA display carefully and continuously. In this way VTS functions can be realized and safety within the port can be maintained.

Basically, the ARPA system consists of computerized equipment operating in conjunction with radar. The radar transmitter generates very short pulses of radio waves. When the waves of one of these pulses encounter any obstacle, such as a ship or shore line, part of the radiated energy is reflected and received by the original radar. The reflected pulse constitutes a radio echo. The time between radiating the pulse and receiving the echo can be accurately measured. Therefore the distance between the radar and the ship is calculated.

VTS improves the port's operational efficiency through the management of vessel entry/departure and shortens the berthing time of vessels by providing real time information on port operation. VTS information also mitigates the risk of vessel collision.

2.3 THE NEED FOR SECURITY IN THE CASPIAN SEA

According to the U.S. Energy Information Administration (January 2010), Kazakhstan's oil production reached 1.4 million barrels per day (bbl/d) in 2008, more than double the level of a decade earlier, while domestic oil consumption remained low at 239,000 bbl/d. Furthermore, the development of the giant Tengiz and Karachaganak fields is expected to add 1.5 million bbl/d by 2014. Due to the expanding volume of exported oil it is very important to ensure safe and secure transportation in the Caspian Sea.
KazMunaiGas (KMG) and the State Oil Company of Azerbaijan (SOCAR) signed a joint-venture agreement to build the Kazakhstan Caspian Transportation System to export the oil from the Kashagan oil field in Kazakhstan to Azerbaijan. KMG and SOCAR created a jointly owned company to build terminals and tankers and link the terminals to the Baku-Tbilisi-Ceyhan (BTC) pipeline.

The project includes:

1. Installation of an on-shore pipeline from the Kashagan on-shore plant at Eskene on the west coast of Kazakhstan to a new marine terminal located on the Azeri shore of the Caspian Sea.
2. Transportation of the crude oil across Caspian Sea by a shuttle of crude oil tankers.
3. Reception of the oil to a new marine terminal in Baku.
4. Pipeline installation between the Azeri marine terminal and the BTC pipeline.

The Kazakhstan Caspian Transportation System (KCTS) enhances Kazakhstan's growing role as a key hub for oil and gas exports from Central Asia. In addition to the BTC pipeline, Kazakhstan produced 70.0M tons/yr (1.4 M bb/d). Reportedly, 100,000 bb/d of oil is currently being shipped across the Caspian. Trans-Caspian shipments to Baku are to eventually reach 500,000 bb/d, according to an October 2009 agreement between Kazakhstan and Azerbaijan. Kazakhstan ships oil to Baku where the oil moves to the BTC pipeline or by rail to Batumi, Georgia. The $3 billion KCTS is expected to become operational by 2011. It would start by shipping 5M tons/yr (100,000 bb/d) to Azerbaijan, with subsequent phased expansion to 38M tons/yr. The project plans an expansion of BTC to 1.5M bb/d from its current design capacity of 1.2M bb/d. Kashagan production is due to reach 150,000 bb/d by 2013-14, with an increase of 150,000 bb/d each year over the next two years. The consortium plans to reach maximum output of 1.5mn b/d by the end of the next decade. The U.S. export

potential for the KCTS is estimated at $300 million based on the USTDA-funded KCTS Definitional Mission Final Report (USTDA #2009-81012) produced by Intratech.

2.4 THE NEED FOR LONG RANGE IDENTIFICATION AND TRACKING SYSTEM

Safety and port security have become more pressing issues in maritime ports due to a series of factors. These include post-9/11 concerns about the threat of terrorism and illegal immigrants putting themselves at serious risk of injury or death by stowing away. The new IMO regulation on LRIT is included in SOLAS chapter V on Safety of Navigation, through which LRIT is introduced as a mandatory requirement for the following ships on international voyages: passenger ships, including high-speed craft; cargo ships, including high-speed craft, of 300 gross tons and up; and mobile offshore drilling units. The regulation on LRIT establishes a multilateral agreement for sharing LRIT information for security and search and rescue purposes among SOLAS) contracting governments, to meet the maritime security needs and other concerns of those governments. It maintains the right of flag states to protect information about the ships entitled to fly their flag, where appropriate, while allowing coastal states access to information about ships navigating off their coasts. Today, in Kazakhstan, major oil companies have very limited LRIT capability by subscribing the Russian "Victoria System". This system is a web-based information system, which provides limited information, controlled by the provider.

The United States Coast Guard (USCG) and the IMO in London proposed long-range identification and tracking (LRIT) after the September 11, 2001, attacks to track the approximately 50,000 large ships around the world. LRIT was advocated by the U.S. Coast Guard as part of its strategy of enhancing maritime domain awareness (MDA).

In the United States, correlation of LRIT information with data from that from other sources enables the Coast Guard to detect anomalies and heighten overall MDA. The United States implementation of LRIT is consistent with the Coast Guard's strategic goals of maritime security and maritime safety and the Department of Homeland Security's strategic goals of awareness, prevention, protection, and response.

Every country already has the right to request such information for ships destined for its ports. The LRIT system will allow the USCG to receive information about all vessels within 1,000 nautical miles (1,900 km) of U.S, territory, unless the vessel's flag administration has not excluded the U.S. from receiving such information.

LRIT provides vessel identity and current location information in sufficient time for a government to evaluate the security risk posed by a ship off its coast and to respond, if necessary, to reduce the risk. In addition, an accurate long-range identification and tracking system has potential maritime safety, marine environmental protection, and maritime search and rescue benefits. Accurate information about the location of a ship in distress as well as ships in the vicinity that could lend assistance will save valuable response time to affect a timely rescue and perhaps minimize pollution along coastline.

The LRIT system was set up under the auspices of the IMO. It is intended to provide a global system for the identification and tracking of ships that extends the monitoring of ships

beyond those areas covered by existing AIS coastal networks (short range). Data derived from LRIT transponders on board ship is only available to authorized recipients such as governments and search and rescue agencies.

The IMO resolution MSC.202 (81), of May 2006 establishes LRIT as an international system and binds all governments that have contracted to the IMO.
The LRIT regulation applies to the following ship types engaged on international voyages:

- All passenger ships including high speed craft,
- Cargo ships, including high speed craft of 300 gross tonnage and above, and
- Mobile offshore drilling units.

These ships must automatically report their position to their Flag Administration at least four times a day. Other contracting governments may request information about vessels in which they have a legitimate interest under the regulation.

2.5 THE NEED FOR MARITIME SEARCH AND RESCUE CAPABILITIES

The Framework Convention for the Protection of the Marine Environment of the Caspian Sea was signed by the five Caspian States in November 2003, with the aim of protecting the Caspian environment from all sources of pollution, as well as preserving and restoring it to the degree possible. According to this convention, the Caspian States undertake to share their efforts to prevent, respond to and cooperate in the cases of pollution, especially oil spills. The SAR system components are described in section 3.4 of this report. There is no organization that is responsible of maritime search and rescue in Kazakhstan. Building the proposed a Safe Marine Traffic Control Center with its maritime search and rescue capability is an important step required by the international conventions and by the Caspian Sea convention (2003).

2.6 THE PORT OF AKTAU MISSION

A proposed a Safe Marine Traffic Control Center in Aktau will support the port mission of ensuring the safety of navigation, providing help to navigators, maintaining waterways and channels, managing the movement of ships and the posting of pilots as well as providing hydrographic services. The port guarantees that the basic operational conditions of navigation of maritime transport are supported and continuously improved, taking into account the safe and economic aspects of navigation as well as its ecological consequences.

2.7 PROJECT SPONSOR'S CAPABILITIES AND COMMITMENT

The port of Aktau was built in 1963. The port is the only seaport in Kazakhstan that handles international shipping of different dry cargos, crude oil and oil products. It has an advantageous geographical location, as it serves the shipping routes from north to south and from west to east. It is an integral part of international shipping routes, the TRACECA shipping corridor linking Europe, Caucasus, and Asia as well as North-South routes, which provide outlets to the ports of the Caspian, Black, Mediterranean, and Baltic Sea basins as well as those of Persian Gulf countries and Southeast Asia.

Order No. 50/2008 of the Minister of Transport and Communications calls for the realization of a plan of action for fulfillment of a program of development of maritime transport in the Republic of Kazakhstan for 2006-2012."

Order No. 048P/2008 of the Committee Chairman of Transportation and Railways addresses establishment of vessel traffic control systems and a regional rescue operations management system in Kazakhstan's sector of the Caspian Sea. This order assigned the port of Aktau as responsible for realization of budget financing for projects intended for the improvement of navigational safety and of safety of life at sea.

The port of Aktau is committed to establish the Safe Marine Traffic Control Center and provide the required budget in accordance with the order

3. PROJECT DESCRIPTION

The project is to procure, design, and install a Safe Marine Traffic Control Center for the government of Kazakhstan.

This study is to examine the feasibility and develop technical and procurement specifications for the Safe Marine Traffic Control Center.

This center includes three components (1) vessel traffic services (VTS), (2) long range identification and tracking (LRIT) capability, and (3) search and rescue (SAR) capability. The center would provide short-range and long-range vessel traffic monitoring and security.

The requested assistance is to examine the feasibility of developing the Safe Marine Traffic Control Center and to develop technical and procurement specifications for the center. The technical specifications are required before the procurement activities can begin. The study comprises the tasks described in the Terms of Reference.

TECHNICAL ASSESSMENT

3.1 TECHNOLOGY

The technology for this system has been chosen to take advantage of advances in technology that improve the navigational decision making of mariners and reduce the costs to levels that make their use feasible. It involves an integrated system of electronic equipment, electronic nautical charts, continuous real-time positioning information, information on navigation routes, aids to navigation and a shore-based automatic ship identification system, transponders, and provision of real-time navigational, meteorological, and oceanographic, information. Shipmasters use the information to guide their ships safely through busy shipping lanes. Shore-based port authorities use the information to precisely identify and track ships. This system is therefore, a valuable tool for ensuring the safety of navigation and for preventing and controlling marine pollution.

3.2 VESSEL TRAFFIC SYSTEMS (VTSS)

VTSs are shore-side installations that provide a range of information to ships from simple messages concerning the position of other traffic or meteorological hazards to extensive management of traffic within a port or waterway.

VTSs establish and maintain shipping safety in ports, rivers and coastal waters. Monitoring is carried out by means of X- and S-band radars as primary sensors. These are supported by a variety of additional identification and assistance tools such as automatic identification system (AIS) and radio communication equipment.

Generally, ships entering an area served by a VTS report to the authorities, usually by radio, and can be tracked by the Safe Marine Traffic Control Center. Ships must keep watch on a

specific frequency for navigational or other warnings. They also may be contacted directly by the VTS operator if there is risk of an incident or, in areas where traffic flow is regulated, to be given advice on when to proceed. The international convention for Safety of Life at Sea (SOLAS) states that governments may establish VTS when, in their opinion, the volume of traffic or the degree of risk justifies such services.

VTSs should always have a comprehensive traffic image, which means that all factors influencing the traffic as well as information about all participating vessels and their intentions should be readily available. By means of the traffic image, situations that are developing can be evaluated and responded to. The data evaluation depends to a great extent on the quality of the data that are collected and the ability of the operator to combine this with an actual or developing situation. The data dissemination process conveys the conclusions of the operator.

The VTS project for Kazakhstan shall include a set of Radar, workstations, and communications equipment. The configuration of the VTS equipment will be defined as a part of the feasibility study tasks

3.3 LONG RANGE IDENTIFICATION AND TRACKING SYSTEM

Tracking of any ship begins with LRIT positional data being transmitted from the ship-borne equipment. The LRIT information transmitted includes the ship's position, time, and identification. The communication service provider (CSP) furnishes the communication infrastructure and services necessary for establishing a communication path between the ship and the application service provider (ASP). The LRIT information transmitted from the ship will travel across the communication path set up by the CSP to the ASP. The ASP, after receiving the LRIT information from the ship, will add additional information to the LRIT message and pass the expanded message to its associated LRIT national data center (NDC). The ASP provides the functionality required for the programming and communicating of commands to the ship-borne equipment. The LRIT data, along with all the parameters added by the various LRIT components, are described in the messaging section of the Marine Stewardship Council's communications document. LRIT data centers will store all incoming LRIT information from ships instructed by their administrations to transmit LRIT information to that data center.

LRIT data centers will disseminate LRIT information to LRIT data users according to the data distribution plan (DDP). The LRIT DDP will contain the information required by the data centers for determining how LRIT information will be distributed to the various contracting governments. The DDP will contain information such as standing orders from contracting governments and geographical polygons relating to contracting governments, coastal waters, ports, and port facilities. LRIT data centers will process all LRIT messages to and from the LRIT International Data Exchange (IDE). The IDE will process all LRIT messages among LRIT data centers. The IDE will route the message to the appropriate data center based upon the address in the message and the Internet protocol addresses in the DDP. LRIT data users may be entitled to receive or request LRIT information in their capacity as a flag state, port state, coastal state, or SAR service.

The IMO has been looking at the concept since 2002. In May 2006, its Maritime Safety Committee (MSC) adopted new Safety of Life at Sea (SOLAS) regulations for the LRIT together with associated performance standards and functional requirements. The MSC also adopted a related resolution, Arrangements for the Timely Establishment of the Long-Range Identification and Tracking System. This resolution provided for the new SOLAS regulation to come into force on January 1, 2008, and for the LRIT system to be operational by December 31, 2008. The SOLAS amendment provides for contracting governments to be entitled to receive identification, position, and time reports from:

- Ships registered to that member flag state wherever the ship is located.
- Ships that have declared their intention to enter a port in a member state's territory.
- Ships passing within 1,000 miles of the coastline of a member state's territory.
- Ships in an area where a search and rescue operation is under way.

The new regulation on LRIT is included in SOLAS chapter V on Safety of Navigation, through which LRIT is introduced as a mandatory requirement for the following ships on international voyages: passenger ships, including high-speed craft; cargo ships, including high-speed craft, of 300 gross tons and up; and mobile offshore drilling units.

The LRIT system has been in force since 1 July 2009. The system specifies that Flag States should ensure as a minimum that four position messages per ship per day (every 6 hours) are sent, stored, and are available for those actors entitled to access LRIT information.

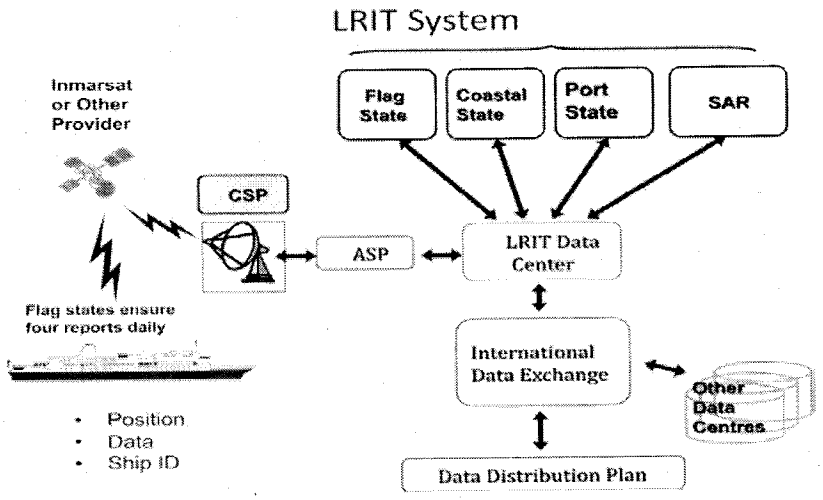
LRIT actors include the following:

- Flag states demanding information on the location of their vessels irrespective of their location.
- Coastal states may request information on ships up to 1000 N miles from their coasts irrespective of their flag.
- Port states may request information on those ships that have one of their ports as a destination, irrespective of their location or flag (on receipt of the Notice of Arrival).
- Search and rescue authorities.

The international LRIT system receives, stores and disseminates LRIT information on behalf of all SOLAS-convention contracting governments.

The LRIT system consists of the following components:

- Ship-borne LRIT information-transmitting equipment (Responsibility of ship owner).
- Communication service providers.
- Application service providers.
- LRIT data center(s), including any related vessel monitoring system(s).
- LRIT data distribution plan and the International LRIT Data Exchange.



There two cost elements for the LRIT system:

1)The cost to IMO member states. This includes four components: (1) the data center cost; (2) the cost for ships of country's own flag to report to the system; (3) the cost for data requested through the system; and (4) the LRIT coordinator costs associated with audit and oversight functions. The International Mobile Satellite Organization (IMSO) is appointed as the LRIT coordinator. For LRIT data used by SAR there is no cost to the rescue coordination center requesting the data. However, the cost for the communications and data transfer is borne by the flag of the vessel from which data was requested and will be part of the overhead of LRIT.

2)The cost to ship owners, including cost of ship-borne equipment. This cost is to ensure that ship-borne equipment can respond to the LRIT requirements. Some ships have existing equipment that can be used for LRIT, while other ships may require LRIT-specific equipment. There is an additional cost to test the ship-borne equipment to verify its compliance. Upon successful tests, the ship is issued a conformance test report.

Data centers can be national (established to provide service to only one contracting government); cooperative (established to provide services to a number of contracting governments) or regional (established to provide services to a number of contracting governments acting through a regional entity of some kind). The IMO performance standard considers an international data center (IDC) to provide LRIT services on an international basis to many countries that do not wish to establish their own data center.

There are different options for establishing a data center:

- Develop a national data center in-house.
- Buy the services from a commercial data center provider as a national data center.
- Join with other member states to form either a regional data center or a cooperative data center.

The proposed feasibility study shall examine all three options and provides its recommendations to the port of Aktau. At this time, the port intends to buy the services from a commercial data center and build its own national data center (Second option).

3.4 SEARCH AND RESCUE SYSTEM

Search and Rescue comprises the search for, and provision of aid to, persons, ships or other craft, which are, or are feared to be, in distress or imminent danger. The Global Maritime Distress Safety System (GMDSS) is an internationally agreed-upon set of safety procedures, types of equipment, and communication protocols used to increase safety and make it easier to rescue distressed ships, boats and aircraft. The system is intended to perform the following functions: alerting (including position determination of the unit in distress), search and rescue coordination, locating (homing), maritime safety information broadcasts, general communications, and bridge-to-bridge communications.

SAR SYSTEM COMPONENTS

The primary SAR system components are:

1) Communications throughout the SAR Regions (SRRs) and with external SAR services;
2) A Rescue Coordination Center (RCC) for the co-ordination of SAR services;
3) One or more Rescue Sub-Centers (RSCs) to support an RCC within its SRR, if necessary;
4) SAR facilities, including Search and Rescue Units (SRUs) with specialized equipment and trained personnel as well as other resources that can be used to conduct SAR operations.

1) Communications

The main functions of a SAR communications system are:

- Receipt of alerts from equipment used by persons in distress;
- Exchange of information with persons in distress and among the SAR mission coordinator (SMC), on scene coordinator (OSC) and SAR facilities for co-ordination of responses to SAR incidents; and
- Direction finding (DF) and homing that allow SRUs to be dispatched to the vicinity of the distress and to home on signals from equipment used by survivors.

The International Telecommunications Union (ITU) Radio Regulations, which were developed in co-operation with its Member States and the IMO, provide for use of radio frequencies with which SAR personnel should be familiar. The following is an overview of mobile services and the frequencies they use.

(1) Maritime Radio Service

Vessels communicate with coastal radio stations and with each other on maritime frequencies available in MF, HF and VHF bands.

- Medium frequencies (MF: 300 to 3000 kHz) are commonly used for maritime services.
- A wide range of maritime HF frequencies (3000-30000 kHz) are allocated and subdivided for radiotelegraphy and radiotelephony.
- The frequency 156.8 MHz (Channel 16) is the international VHF maritime voice distress, safety and calling frequency. The frequency 156.3 MHz (channel 06) can be used for communications on-scene.

(2) Global Maritime Distress and Safety System

After February 1, 1999, ships subject to the SOLAS Convention must be outfitted with certain communications equipment, namely the shipboard portion of the Global Maritime Distress and Safety System (GMDSS).

GMDSS can only work when an agreed international SAR plan is developed in accordance with the IMO SAR Convention to ensure that SAR services are available and that alerts can be routed quickly and reliably to the proper place within the SAR system.

The general goal of GMDSS is to take advantage of available technology to shift alerting emphasis from ship-to-ship towards ship-to-shore where SAR professionals can help arrange assistance. GMDSS capabilities of vessels not subject to SOLAS may range from full compliance with SOLAS to no GMDSS capabilities at all. Introduction of GMDSS aboard only some vessels adds capabilities for those vessels, but also introduces incompatibility between those vessels and vessels not GMDSS-equipped. It also introduces need for SAR authorities to support two maritime mobile systems both ashore and afloat. When most ships discontinue watch keeping on Channel 16, most small vessels will still depend on Channel 16 for distress, safety and calling.

The equipment that ships must carry to comply with SOLAS may be affected by the coast radio stations (CRSs) with digital selective calling (DSC) availability, Navigational Telex (NAVTEX) transmitters, etc. For example, if a State does not provide short-range DSC coastal coverage, ships must be outfitted with longer-range equipment even if it sails only in those coastal waters.

(3) Emergency Position-Indicating Radio Beacons (EPIRBs)

There are two types of maritime satellite EPIRBs that are accepted into GMDSS:

- 406 MHz satellite EPIRBs whose signals are relayed via the international satellite-based SAR distress alert detection and information distribution system (Cospas-Sarsat) satellites, local user terminals (LUTs) and mission control centers (MCCs) to SAR Points of Contact (SPOCs); and
- Inmarsat–E EPIRBs whose distress messages are relayed via Inmarsat satellites and Inmarsat-E coast earth stations (CESs) to lnmarsat-E RCCs.

Close to shore, non-satellite VHF EPIRBs operating on Channel 70 may be used instead of satellite EPIRBs. Without VHF DSC coast stations, signals from these EPIRBs may go undetected.

(4) Satellite Communications

The primary Satellite systems that are used now for SOLAS compliance are Cospas-Sarsat and Inmarsat.

(5) Inmarsat SafetyNET

The Inmarsat C provides ship/shore, shore/ship and ship/ship store-and-forward data and email messaging, the capability for sending preformatted distress messages to a rescue coordination center, and the Inmarsat C SafetyNET service. The Inmarsat C SafetyNET service is a satellite-based worldwide maritime safety information broadcast service of high seas weather warnings, NAVAREA navigational warnings, radio-navigation warnings, and ice reports.

2) RCC for coordination of SAR Services

The RCC is an operational facility responsible for promoting efficient organization of SAR services and coordinating the conduct of SAR operations within an SRR. An RCC coordinates, but does not necessarily provide, SAR facilities throughout the internationally

recognized SRR described the Global SAR Plan of IMO. Coastal States with the added responsibility for maritime SAR incidents can meet this with a maritime RCC (MRCC).

SAR managers should ensure that the RCC is familiar with the capabilities of all of the facilities available for SAR in its SRR. Collectively, these facilities are the means by which the RCC conducts its operations. Some of these facilities will be immediately suitable for use; others may have to be enhanced by changing organizational relationships or supplying extra equipment and training. If the facilities available in certain parts of an SRR cannot provide adequate assistance, arrangements should be made to provide additional facilities.

3) Rescue Sub Centers to support an RCC within its SRR

Co-operative arrangements among States could make it unnecessary for some States to have an RCC. RSCs may be established under an RCC of the State concerned, under an RCC operated by another State or under an RCC operated by more than one State.

The RCC must have certain basic capabilities before it is recognized as having responsibility for an SRR by listing in the IMO Global SAR Plan, Additional or improved capabilities may be added as ability and resources permit. A fully capable RCC may be viewed as having two sets of capabilities, "required" and "desired." These capabilities are outlined in the following table.

Required	Desired
24-hour availability Trained personnel Persons with a working knowledge of the English language Charts which apply to the SRR (nautical, topographic and hydrographic) Means of plotting Ability to receive distress alerts, e.g. from Mission Control Centers, Coastal Earth Stations, etc. Immediate communications with: 1. Associated RSCs 2. DF and position-fixing stations Rapid and reliable communications with: 1. Parent agencies of SRUs 2. Adjacent RCCs 3. Designated meteorological offices 4. Employed SRUs 5. Alerting posts 6. Plans of operation	Wall chart depicting SRR, SRSs, and neighboring SRRs, SAR resources Computer resources Databases

Capabilities of Fully Capable RCC

4) SAR facilities with specialized equipment and trained personnel

An RCC should be located where it can effectively perform its functions within its SRR, The RCC may use accommodations at an existing suitable facility, Often agencies responsible for communications, defense, law enforcement, air and marine services or other primary missions have an operations center which can be readily adapted for use also as an RCC. These centers, while not dedicated only to SAR, may act as RCCs in addition to their other functions as long as the centers and their staff meet the SAR requirements. Coordination skills used for other purposes are similar to those used to manage a SAR mission. This arrangement makes use of existing equipment and trained, experienced staff. However, additional personnel or space may be needed depending on the expected number and complexity of SAR operations. Also, the RCC may be located close to a well-equipped center such as area control center (ACC) so that additional communications facilities can be kept to a minimum. In addition to communications facilities and general office equipment, a desk, plotting space, charts showing the RCC's area of responsibility and adjacent areas, and filing space are needed. Use of various technologies may improve the RCC performance and affect the staffing and training requirements.

The equipment of an RCC will be determined by the expected demands to be made on the RCC and the extent of functions it should perform,

(a) Communications: Communications are met by public services, or installation of an Inmarsat earth station. Reliable dedicated lines, which can preserve message priority, are preferred. In addition to telephone lines with published numbers, one telephone line should have an unlisted, confidential number to ensure the availability of one out-going line in situations where there are many incoming telephone calls. All voice equipment, including telephones, should be attached to a multichannel tape recorder, preferably with a time recording. This allows the RCC to review verbal information. Arrangements can be made with the public telephone administration to ensure that calls from originators who do not wish to cover the charges are passed without delay to the RCC on a collect or pre-paid reply basis. Such arrangements should be widely publicized to encourage outside sources to provide information on missing or distressed craft.

(b) Information: Ready access to operational information will help the SMC take immediate and appropriate action in an emergency. Much of this information derives from the RCC plan of operations and SAR databases. Use of large-scale wall charts showing assigned SRRs and locations of resources along with a SAR facility status board or computer file reflecting the current status of all SAR facilities, telephone numbers, and other useful information, is practical. The chart or map should also show areas adjacent to the SRR. The map could display, by means of colored pins or other symbols, information of interest.

(c) Plotting facilities: The RCC and RSC should have a stock of maritime maps and charts, plotting equipment, and other information necessary for their use.

(d) Publications and supplies: The publications and supplies to be available at the RCC will vary, but should include:

- SAR publications of IMO as well as of the national and neighboring SAR authorities;
- Relevant State documents, e.g., Notices to Mariners and, if considered necessary, those of adjacent States;
- Communications publications;

- Indexes of names, addresses, telephone and facsimile numbers; and relevant checklists and forms.

Staffing

RCCs perform administrative and operational duties. Administrative duties, including planning, co-operation with providers of facilities, exercises and case studies, are concerned with maintaining the RCC in a continuous state of preparedness. In areas of low SAR activity the administrative duties are of high importance since they are the best way to keep the staff in readiness for SAR cases. The administrative duties should be shared so that more than one person is capable of performing these duties. Effective administrative actions help to ensure proficient SAR operations. SAR operations are the responsibility of the SMC and this responsibility may be met by the RCC chief or by other properly trained staff of the RCC. Personnel from services or organizations providing facilities can be used as part of the RCC team if they are duly trained and qualified. They will normally serve in support of expert functions such as firefighting or air or marine safety. The RCC must be prepared to undertake and continue operational duties 24 hours per day. This level of readiness requires that multiple persons be trained and qualified to assume SMC duties.

(a) RCC Chief. The RCC chief may be a person who also performs other functions. Whenever an RCC is established in conjunction with a VTS unit or similar operations center, responsibilities for the RCC are often placed on the chief of that facility. In such instances, another person should be appointed to handle day-to-day management of the RCC. The RCC chief must make appropriate preparations, plans, and arrangements as well as oversee, if not delegated, the daily operations of the RCC to ensure that when an incident occurs the SAR operation can be promptly performed.

(b) RCC Staff. The RCC staff consists of personnel who are trained and capable of planning and coordinating SAR operations. If RCC staff members have duties in addition to SAR, the additional functions should be considered when determining the staffing needs. The number of personnel required will vary with local requirements, traffic density, seasonal conditions, meteorological conditions and other SAR conditions. An RCC must be in a constant state of operational readiness. Where the RCC does not maintain continuous staffing, or only has one trained and capable RCC person on duty, provision must be made for stand-by RCC staff to be mobilized rapidly.

(c) SAR Mission Coordinator (SMC). An SMC should be designated for each specific SAR operation, and adequate numbers of personnel qualified to perform the SMC function must be readily available on a 24-hour basis. This is a temporary function which may be performed by the RCC chief or a designated SAR duty officer assisted by as many staff members as may be required. A SAR operation may continue over a prolonged period of time. The SMC is in charge of a SAR operation until a rescue has been affected or until it has become apparent that further efforts would be of no avail. The RCC plan of operations should give the SMC the freedom to employ any facility, to request additional ones and to accept or reject any suggestions made during the operation. The SMC is responsible for planning the search and coordinating the transit of SRUs to the scene. SMCs are not normally involved in the conduct of the SAR operation. (Duties of the SMC are discussed

further in the International Aeronautical and Maritime Search and Rescue Manual for Mission Co-ordination.) The number of persons to be available for assignment, as SMC will depend on:

- Possible need to co-ordinate operations from a location other than the RCC, e.g., from available communications facilities;
- Expected frequency of SAR incidents, including the possibility of more than one incident occurring simultaneously;
- Size of the area and prevailing conditions (e.g. climate or topography); and need to allow for vacation, training courses, illness, relief and travel.

4. IMPLEMENTATION FINANCING

The total estimated cost for the project is $13,500M. Financing from the Export- Import Bank of the U.S. (Ex-Im Bank) is available in Kazakhstan for U.S. exporters. While lending has focused largely on transactions with state enterprises, the Ex-Im Bank is interested in working more closely with the private sector in Kazakhstan. U.S. companies competing for government tenders are advised to work closely with the U.S. Embassy and the Ex-Im Bank once evidence of a foreign competitor's ability to obtain concessional financing becomes clear.

Excellent financing terms offered by European suppliers remain an obstacle for U.S. companies, but the Ex-Im Bank will strive to match concessional financing from foreign competitors' governments.

The World Bank [The International Bank for Reconstruction and Development (IBRD)] supports a variety of projects in Kazakhstan. IBRD efforts are focused on several areas, including the environment, the financial sector, privatization and industrial restructuring, the road network, dams and irrigation. The World Bank is currently funding 17 active projects in Kazakhstan in areas including Agriculture, Electricity, and education. The European Investment Bank (EIB) and the Japanese Economic Development Fund are both involved in financing a variety of major infrastructure projects and vocational training. The EIB also finances imports of European capital goods. U.S. companies participate in World Bank-financed projects in Kazakhstan but are sometimes barred from participating in European-Union-funded projects.

While any of the above-mentioned options could be available, the most likely source of implementation financing is local funds. The port of Aktau is planning to disburse funds for this project from the budget allocated.

5. ANALYSIS OF KEY HOST COUNTRY DEVELOPMENT IMPACTS

This project provides substantial developmental impact in several areas, including infrastructure, human capacity building, technology transfer, and productivity improvement.

Infrastructure. This project will provide great environmental improvements by helping to reduce oil-spill accidents and by providing electronic communication instead of the use of fuel-operated vehicles to transport information. Furthermore, it includes development of

several infrastructure components such as telecommunications systems. In addition, it will provide a great improvement in port security

Human Capacity Building. Project implementation will provide substantial human capacity building. It will create at least 10 new skilled jobs in the port. It will offer advanced training for at least 20 of the existing employees in areas of computers and operation of advanced vessel traffic services and security systems.

Technology Transfer and Productivity Improvement. The project will result in a good introduction to advanced technologies in several areas, including advanced telecommunications, information management systems, advanced information technology, and modern security. Improvement of vessel traffic management through VTS would reduce the waiting time by several hours for vessels entering the port and shorten the turn around time for these vessels. Modern SAR System provides faster service to personnel in distress. Advanced telecommunications system helps serving multiple vessels simultaneously. Implementation of these systems has increased productivity and efficiency in other leading ports.

6. ENVIRONMENTAL IMPACT AND ANALYSIS

Implementation of a Safe Marine Traffic Control Center will have a positive impact on the environment by helping to improve response to oil spills and reducing the risk of marine disasters.

In addition, most automation projects have a positive impact on the environment. In particular, a telecommunications network transfers voice, data, and images electronically, thereby serving as a substitute for vehicular movement of information. As less private and public transportation is used to handle communication activity, the spread of noxious fumes to the environment is minimized, and chemical and human-made resources suffer less depletion. Human efficiencies are increased, as valuable time and energies can be allocated to other productive activities. The implementation of telecommunications projects would require the installation of hardware and software systems in various buildings at the port of Aktau. There are no components of the project that will require erection of new plants or factories. In addition, there are no specific emissions or liquid discharges that will result from the implementation of the project. Therefore, unlike in the case of infrastructure (energy, transportation, etc.) or industrial (cement, aluminum plant, etc.) projects, where environmental impacts can be significant, requiring a comprehensive environmental impact assessment, the proposed system will not have any adverse environmental impacts. In addition, the need for environmentally controlled spaces for the equipment and workstations provides clean and dust free workspace. The terms of reference for the feasibility study include a preliminary review of the project's impact on the environment, with reference to local environmental requirements and those of potential lending agencies. The study should identify potential negative impacts and discuss the extent to which they can be minimized.

7. ECONOMIC ANALYSIS

The economic benefits from this system will derive from two main sources:

(1) Establishment of the Safe Marine Traffic Control Center will lower the costs of shipping

by reducing the risk of accidents. It also will allow ships to operate in storms and other adverse conditions that would idle them if they relied on conventional navigational systems. It may also generate value for the fishing industry by contributing to improved protection of fish stocks. The reduction in cost of shipping, due to safer and more efficient navigation, is a direct impact of the system implementation.

(2) The improved environmental information systems will help policy makers better manage natural resources. Accurate estimate of the costs and benefits of the system would be available upon completion of the feasibility study.

8. FINANCIAL ANALYSIS

The Port of Aktau is expected to bear the costs for maintaining and operating the system because they will benefit directly from the improved navigational services.

As the implementation of the Safe Marine Traffic Control Center improves the safety of navigation, hence reduces risks of accidents, the cost of shipping insurance can be expected to be reduced.

Furthermore, the center implementation will help to improve response to oil spills. Countries such as Kazakhstan that are signatories to the liability and compensation for oil pollution damage conventions (CLC69) have a strong incentive to maintain oil spill response capacity once created. These conventions entitle signatories to compensation for damage arising from oil spills, but only if countries have maintained adequate capacity to respond to oil spill and limit its damage.

9. REVIEW OF REGULATORY ISSUES

The Safety of Life at Sea convention states that governments may establish VTS when, in their opinion, the volume of traffic or the degree of risk justifies such services.
The International Ship and Port Facility Security (ISPS) Code is an amendment to the SOLAS Convention (1974/1988) on minimum-security arrangements for ships, ports and government agencies. ISPS came into force in 2004; it prescribes responsibilities of governments, shipping companies, shipboard personnel, and port/facility personnel to "detect security threats and take preventative measures against security incidents affecting ships or port facilities used in international trade."

10. IMPACT ON U.S. LABOR

The Safe Marine Traffic Control Center project will have a positive impact on the U.S. if a U.S. company wins the implementation phase. The proposed feasibility study does not provide (a) any financial incentive for a business enterprise currently located in the U.S. to relocate outside of the U.S.; (b) assistance for any project or activity that contributes to the violation of internationally recognized workers rights; or (c) direct assistance for establishing or expanding production of any commodity for export by any country other than the United States.

11. U.S. EXPORT POTENTIAL

The following table depicts the estimated export potential for the Safe Marine Traffic Control Center project:

Goods and Services	Price (000)
Computer system (redundant): Radar tracker, data display system, video recording	$800
Database management system	$150
Radar transceiver (redundant), at center	$500
Radar antenna, at center	$120
(2) Remote radar transceivers (redundant)	$1,000
(2) Radar antenna, remote	$240
(2) Communications links between remote sites and center	$120
Three workstations: geographic and data displays, communications, and radar monitoring and control	$450
Testing and acceptance	$300
Radar, communications, and AIS antenna towers)	$600
Communications equipment (redundant) and voice recording equipment	$120
AIS equipment for tug boats and pilot boats	$100
Program management	$300
System design and engineering	$1,250
AIS equipment at the Marine Vessel Traffic Control Center (redundant)	$150
AIS equipment along coast	
LRIT communications equipment, at center	$150
Ship-borne LRIT equipment (paid by ship owner)	$250
SAR communications equipment, at center	$120
Ship-borne SAR equipment (paid by ship owner)	$250
SAR software, installation and testing	$60
Operation and maintenance training	$125
Weather monitoring and reporting station	$75
Installation of hardware	$900
Operational procedures	$60
Uninterrupted power supply (UPS), at center and remote sites	$120
Backup power at center and two remote sites	$1,000
Building modifications, raised flooring, false ceiling	$250
Central air conditioning equipment at center and wall units at remote sites	$180
Documentation	$60
Training: operators, supervisors, and maintenance personnel	$800
Four-year maintenance expenses	$1,000
Total System	$11,600

The estimated export potential for the project implementation is $12.1 million.

In addition, there are other costs associated with implementing the LRIT system. These include: applications service provider, communications service provider, and LRIT coordinator services. These costs are estimated at $250K per year, or $1.25 M, for the first five years. These services would be acquired from a European company. An additional $650K would consist of travel costs in Azerbaijan and a contingency.

Thus, the total estimated cost for the center is $13.5 million.

This is a good estimate for the purpose of this report. The site survey of the proposed feasibility study and the decision on the type of LRIT data center (either local or hosted at the service provider's site outside of the country) will provide a more accurate budgetary estimate for the cost of project implementation.

U.S. Suppliers:
The main U.S. suppliers of VTS, LRIT and SAR Systems are Lockheed Martin and Northrop Grumman. U.S. Suppliers subcontract computer and telecommunications hardware and database software to other U.S. companies, including Dell, Hewlett Packard, and Oracle. The DM Contractor has contacted both companies who indicated their interest in doing business in Kazakhstan. Lockheed Martin has completed a VTS for the port of Tangier, Morocco, while Northrop Grumman is currently pursuing several international surveillance systems. Both companies have business development personnel who are targeting business in the region.

Lockheed Martin:
July 2008, Lockheed Martin deployed the final phase of the VTS in Turkey. This phase included the addition of three new remote sensor sites to provide coverage of the Marmara Sea and entrance to the Canakkale Straits. Turkey initially rolled out the first phase of the system in 2003 when it deployed Lockheed Martin's VTS for the Istanbul and Canakkale Straits.

2004: Lockheed Martin completed the first phase of VTS in Greece. The system included installation of National VTS Center at Piraeus and development of control centers for the Piraeus area, Kerkyra, Patra, and Rafina.

2003: Lockheed Martin completed key milestones for the U.S. Coast Guard's Ports and Waterways Safety System (PAWSS), enhancing safety in New York Harbor and other major waterways. The five milestones involved Vessel Traffic Management (VTS) and Automatic Identification System (AIS) work for the Port of New York and New Jersey, Port of New Orleans, Port of Valdez, AK, Port of Houston and Galveston, and Sault Ste. Marie, MI.

2002: Lockheed Martin completed the final Site Acceptance Test (SAT) for the Gulf of Suez Vessel Traffic Information Management System (VTIMS), which monitors and controls ship traffic in all major port and harbor waters

2002: Lockheed Martin signed a contract to provide Egypt with a fully integrated maritime search and rescue (SAR) system for the Gulf of Suez (GOS) The SAR system complements the Gulf of Suez VTIMS provided by Lockheed Martin under a 1998 contract.

Northrop Grumman: Acquired Sperry Marine (Charlottesville, VA), a major Radar Systems supplier.

December 2008: The U.S. Coast Guard awarded Northrop Grumman a contract to deliver the core Nationwide Automatic Identification System data exchange capability. Under the $12 M contract, Northrop Grumman will provide the necessary shore-side communications, network and processing capability to ensure the effective exchange of Automatic Identification

System information between AIS-equipped vessels, aircraft, aids to navigation and shore stations within all major U.S. ports, waterways and coastal zones as well as from AIS-equipped vessels bound for the U.S.

June 2005: Completed a major upgrade of the VTS for Plymouth Harbor and the Royal Naval Dockyard at Devonport, U.K.,

12. FOREIGN COMPETITION AND MARKET ENTRY ISSUES

European companies have a good market share in the Kazakhstani market. Their geographic proximity and aggressive marketing is helping them to gain and maintain this position. The foreign competition in VTS projects is mainly from the following European companies:

Kongsberg Norcontrol IT (Norway): http://www.kongsberg.com/eng/KDA/NorcontrolIT/

July 2008. Upgraded the existing VTMIS at Bintulu Port, Sarawak, East Malaysia. The contract was won by Kongsberg Norcontrol IT (Singapore) and is for the delivery and commissioning of new VOC5060 computer hardware and software, extensive user training, and maintenance.

January 2008. Awarded a contract by the Port of Rijeka Authority, Croatia, to supply vessel monitoring and port management solutions. The scope of supply consists of both software and hardware, including radar, VHF system, and three operator stations in addition to a port management information system (PMIS) and a Web-based traffic display with Web access to the PMIS.

December 2007. Completed an upgrade to the UK's Humber Estuary vessel tracking system.

November 2007: Awarded a contract by the Norwegian Coastal Administration for a new Vardø VTMIS. This project, which provides coverage of southern Norway and the North Sea, is called 'C-Scope Its recent extension to south Norway makes it responsible for one of the largest single maritime domains in the world.

December 2006. Supplied Tanzania Ports Authority with a new vessel tracking system for the Port of Dar es Salaam, Tanzania.

September 2006. Awarded a contract to upgrade the vessel tracking system at Tianjin Port in China with a new VTMIS. It features an open system architecture that allows interfacing with other equipment and further expansion. In addition to Norcontrol IT's VOC5060 display software, the contract includes new radar video extraction and tracking functionality. It also features improved warning, logging and replay, and remote display functionality. Norcontrol IT is responsible for supplying several subsystems including two new radars, a VHF system, and equipment for network communication.

September 2005. Awarded a contract to supply a vessel tracking system and Port Management and Information System at Lian Yun Gang seaport, China. The customer is Jiangsu Maritime Safety Administration (MSA), People's Republic of China. Supplied four operator workstations in the Chinese language, which interfaced with Norcontrol IT's Dual PMIS database, also in a Chinese language version. The system includes dual servers for warning and alarm functionality, logging and replay, and an improved tracking closed-circuit television (CCTV) system for the control center at the Lian Yun Gang MSA building. The control center at the Jiangsu MSA vessel tracking system has a remote display installed, and the two radar sites receive radar-tracking systems as well as integrate with the CCTV system.

April 2002. Installed a new VOC 5060 VTS at the Marine Exchange of Southern California. The all-digital system creates a fully integrated information service linked to other port operational areas and functions, including port management and pilot allocation systems.

Atlas Elektronik GMBH (Germany), a joint company of ThyssenKrupp and The European Aeronautic Defence and Space Company N.V. (EADS):
http://www.atlas-elektronik.com/

September **2004.** Awarded contract to upgrade and extend existing VTS facilities at Cape Finisterre, Spain. The network is AIS- compatible and capable of monitoring and controlling movements of an estimated 100,000 vessels per year on the northwest coast of Spain.
May 2003. Awarded a contract to supply the Kuwaiti National Coast Guard with a radar-based coastal surveillance system. The system comprises a series of nine Atlas 9760 VTS high-resolution radar stations providing loss-free, digitized, raw video for operator detection of all sizes of targets.

Sofrelog (France), acquired by EADS in 2006:
http://www.sofrelog.com/

November 2006. Mega Tanger Med project, in Morocco. The system consists of a network of four radars, AIS and CCTV (including infrared and daylight cameras).
September 2005. Completed installation of new-generation VTS and AIS systems at Port of Le Havre, France.
August 2005. Awarded a contract with Chongqing Maritime Safety Administration to supply VTS in the Chongqing section of the Three Gorge Reservoir Area of Yangtze River.
November 2005. Completed the integration of new radar in the VTS at the Ports of Bordeaux, France.
September 2005. Awarded the SPATIONAV V1 project from Ministry of Defense for surveillance of the whole French coast line.
September 2005. Port of Le Havre, France: Completion of installation of new generation VTS and AIS system.
August 2005. Awarded contract to upgrade the Malaysian Sea Surveillance System of the Malacca strait, Malaysia.
March 2005. Selected by Guardia Civil, Spain to deliver 11 mobile radars. This comes after the completion of three similar mobile surveillance units and a fixed system for the Fuerteventura, Canarias Island.
March 2005. Awarded contract for installation of VTS and AIS in the Port of Nantes, France.
October 2004. Completed conversion of two vessel traffic systems integrating the latest computers and software features and building advanced redundancy at the Port of London Authority, U.K.
September 2004. Completed installation of a new VTS including AIS in the Port of Rouen, France.

Selex Sistemi Integrati (Italy):

January 2007. Awarded a contract with the Yemeni Coast Guard to supply of an integrated surveillance system to secure the Yemenite coasts. The system provides coverage of about 450 kilometers of coasts along the Red Sea and in front of the Eritrean and Somalian coasts. The delivery included a national control Center in Sana'a, an area control center in Aden, six local control centers, twelve radar workstations and two mobile units. All centers are networked and connected with the national Center in Sana'a. The VTS's general architecture is one of largest in the world in terms of width of coast coverage. The Yemenite system deploys its capabilities to prevent piracy, intrusion, and international smuggling. It has an

open architecture to allow integration of further capabilities for naval security. In addition to Yemen, Selex Sistemi Integrati has already provided 10 vessel traffic systems to Italy. In addition, they provided Greece, Russia, and lately, Poland with vessel traffic systems.

Indra (Spain):

November 2007: Awarded a contract in Latvia to implement an integrated surveillance system for Latvia's naval forces to protect territorial waters and coasts from all sorts of threats. The Project consists of remote fixed stations equipped with sea-surveillance radar systems and night vision camera along 500 kilometers of Latvia's coast. The stations are connected to a Center located in Liepaja. The Center's function is to integrate all the data compiled by sensor stations to create a common and unified scenario of the Latvian coast to alert the systems operators for possible threats (drug traffic, illegal immigration, smuggled goods).

Transas (Ireland):

June 2009, Completed installation of the first-in-India, middle-size vessel traffic management system in the port of Cochin, India. The system includes X-band radar with a 12-ft antenna, Navtex receiver, Inmarsat C Earth station, three VHF stations, redundant VTMS system server; redundant VTS database server, three dual-display operator workstations, and four dual-display remote operator stations. The remote site comprises coastal radar with a 19-foot antenna, redundant radar processor; AIS base station, CCTV camera system and meteorological station. All information is provided at the administrative building via three operators with four other stations provided to representatives of Cochin Port management.

February 2010: Commissioned a new VTS for the Gibraltar Port Authority.. The system allows operators to visualize and interact with all marine traffic within the area of responsibility by bringing together subsystems including radar, AIS, electro-optical (or CCTV) system, VHF communications (including radio direction finding and digital selective calling), hydro-meteorological data, port information system (a database including vessels, visits, operations, weather log and electronic logbook) and track/audio recording and playback.

ANNEX 3

U.S. TRADE AND DEVELOPMENT AGENCY
Arlington, VA 22209-2131

NATIONALITY, SOURCE, AND ORIGIN REQUIREMENTS

The purpose of USTDA's nationality, source, and origin requirements is to assure the maximum practicable participation of American contractors, technology, equipment and materials in the prefeasibility, feasibility, and implementation stages of a project.

USTDA STANDARD RULE (GRANT AGREEMENT STANDARD LANGUAGE):

Except as USTDA may otherwise agree, each of the following provisions shall apply to the delivery of goods and services funded by USTDA under this Grant Agreement: (a) for professional services, the Contractor must be either a U.S. firm or U.S. individual; (b) the Contractor may use U.S. subcontractors without limitation, but the use of subcontractors from host country may not exceed twenty percent (20%) of the USTDA Grant amount and may only be used for specific services from the Terms of Reference identified in the subcontract; (c) employees of U.S. Contractor or U.S. subcontractor firms responsible for professional services shall be U.S. citizens or non-U.S. citizens lawfully admitted for permanent residence in the U.S.; (d) goods purchased for implementation of the Study and associated delivery services (e.g., international transportation and insurance) must have their nationality, source and origin in the United States; and (e) goods and services incidental to Study support (e.g., local lodging, food, and transportation) in host country are not subject to the above restrictions. USTDA will make available further details concerning these standards of eligibility upon request.

NATIONALITY:

1) Rule

Except as USTDA may otherwise agree, the Contractor for USTDA funded activities must be either a U.S. firm or a U.S. individual. Prime contractors may utilize U.S.

subcontractors without limitation, but the use of host country subcontractors is limited to 20% of the USTDA grant amount.

2) Application

Accordingly, only a U.S. firm or U.S. individual may submit proposals on USTDA funded activities. Although those proposals may include subcontracting arrangements with host country firms or individuals for up to 20% of the USTDA grant amount, they may not include subcontracts with third country entities. U.S. firms submitting proposals must ensure that the professional services funded by the USTDA grant, to the extent not subcontracted to host country entities, are supplied by employees of the firm or employees of U.S. subcontractor firms who are U.S. individuals.

Interested U.S. firms and consultants who submit proposals must meet USTDA nationality requirements as of the due date for the submission of proposals and, if selected, must continue to meet such requirements throughout the duration of the USTDA-financed activity. These nationality provisions apply to whatever portion of the Terms of Reference is funded with the USTDA grant.

3) Definitions

A "U.S. individual" is (a) a U.S. citizen, or (b) a non-U.S. citizen lawfully admitted for permanent residence in the U.S. (a green card holder).

A "U.S. firm" is a privately owned firm which is incorporated in the U.S., with its principal place of business in the U.S., and which is either (a) more than 50% owned by U.S. individuals, or (b) has been incorporated in the U.S. for more than three (3) years prior to the issuance date of the request for proposals; has performed similar services in the U.S. for that three (3) year period; employs U.S. citizens in more than half of its permanent full-time positions in the U.S.; and has the existing capability in the U.S. to perform the work in question.

A partnership, organized in the U.S. with its principal place of business in the U.S., may also qualify as a "U.S. firm" as would a joint venture organized or incorporated in the United States consisting entirely of U.S. firms and/or U.S. individuals.

A nonprofit organization, such as an educational institution, foundation, or association may also qualify as a "U.S. firm" if it is incorporated in the United States and managed by a governing body, a majority of whose members are U.S. individuals.

SOURCE AND ORIGIN:

1) Rule

In addition to the nationality requirement stated above, any goods (e.g., equipment and materials) and services related to their shipment (e.g., international transportation and insurance) funded under the USTDA Grant Agreement must have their source and origin in the United States, unless USTDA otherwise agrees. However, necessary purchases of goods and project support services which are unavailable from a U.S. source (e.g., local food, housing and transportation) are eligible without specific USTDA approval.

2) Application

Accordingly, the prime contractor must be able to demonstrate that all goods and services purchased in the host country to carry out the Terms of Reference for a USTDA Grant Agreement that were not of U.S. source and origin were unavailable in the United States.

3) Definitions

"Source" means the country from which shipment is made.

"Origin" means the place of production, through manufacturing, assembly or otherwise.

Questions regarding these nationality, source and origin requirements may be addressed to the USTDA Office of General Counsel.

ANNEX 4

GRANT AGREEMENT

This Grant Agreement is entered into between the Government of the United States of America, acting through the U.S. Trade and Development Agency ("USTDA") and the Republican State Enterprise "Aktau International Sea Commercial Port" ("Grantee"). USTDA agrees to provide the Grantee under the terms of this Agreement US$388,959 ("USTDA Grant") to fund the cost of goods and services required for a feasibility study ("Study") on the proposed Maritime Coordination, Safety, and Vessel Traffic Management System project ("Project") in Kazakhstan ("Host Country").

1. USTDA Funding

The funding to be provided under this Grant Agreement shall be used to fund the costs of a contract between the Grantee and the U.S. firm selected by the Grantee ("Contractor") under which the Contractor will perform the Study ("Contract"). Payment to the Contractor will be made directly by USTDA on behalf of the Grantee with the USTDA Grant funds provided under this Grant Agreement.

2. Terms of Reference

The Terms of Reference for the Study ("Terms of Reference") are attached as Annex I and are hereby made a part of this Grant Agreement. The Study will examine the technical, financial, environmental, and other critical aspects of the proposed Project. The Terms of Reference for the Study shall also be included in the Contract.

3. Standards of Conduct

USTDA and the Grantee recognize the existence of standards of conduct for public officials, and commercial entities, in their respective countries. The parties to this Grant Agreement and the Contractor shall observe these standards, which include not accepting payment of money or anything of value, directly or indirectly, from any person for the purpose of illegally or improperly inducing anyone to take any action favorable to any party in connection with the Study.

4. Grantee Responsibilities

The Grantee shall undertake its best efforts to provide reasonable support for the Contractor, such as local transportation, office space, and secretarial support.

5. USTDA as Financier

(A) USTDA Approval of Competitive Selection Procedures

Selection of the U.S. Contractor shall be carried out by the Grantee according to its established procedures for the competitive selection of contractors with advance notice of the procurement published online through *Federal Business Opportunities (www.fedbizopps.gov)*. Upon request, the Grantee will submit these contracting procedures and related documents to USTDA for information and/or approval.

(B) USTDA Approval of Contractor Selection

The Grantee shall notify USTDA at the address of record set forth in Article 17 below upon selection of the Contractor to perform the Study. Upon approval of this selection by USTDA, the Grantee and the Contractor shall then enter into a contract for performance of the Study. The Grantee shall notify in writing the U.S. firms that submitted unsuccessful proposals to perform the Study that they were not selected.

(C) USTDA Approval of Contract Between Grantee and Contractor

The Grantee and the Contractor shall enter into a contract for performance of the Study. This contract, and any amendments thereto, including assignments and changes in the Terms of Reference, must be approved by USTDA in writing. To expedite this approval, the Grantee (or the Contractor on the Grantee's behalf) shall transmit to USTDA, at the address set forth in Article 17 below, a photocopy of an English language version of the signed contract or a final negotiated draft version of the contract.

(D) USTDA Not a Party to the Contract

It is understood by the parties that USTDA has reserved certain rights such as, but not limited to, the right to approve the terms of the contract and any amendments thereto, including assignments, the selection of all contractors, the Terms of Reference, the Final Report, and any and all documents related to any contract funded under the Grant Agreement. The parties hereto further understand and agree that USTDA, in reserving any or all of the foregoing approval rights, has acted solely as a financing entity to assure the proper use of United States Government funds, and that any decision by USTDA to exercise or refrain from exercising these approval rights shall be made as a financier in the course of funding the Study and shall not be construed as making USTDA a party to the contract. The parties hereto understand and agree that USTDA may, from time to time, exercise the foregoing approval rights, or discuss matters related to these rights and the Project with the parties to the contract or any subcontract, jointly or separately, without thereby incurring any responsibility or liability to such parties. Any approval or failure to approve by USTDA shall not bar the Grantee or USTDA from asserting any right they might have against the

Contractor, or relieve the Contractor of any liability which the Contractor might otherwise have to the Grantee or USTDA.

(E) Grant Agreement Controlling

Regardless of USTDA approval, the rights and obligations of any party to the contract or subcontract thereunder must be consistent with this Grant Agreement. In the event of any inconsistency between the Grant Agreement and any contract or subcontract funded by the Grant Agreement, the Grant Agreement shall be controlling.

6. Disbursement Procedures

(A) USTDA Approval of Contract Required

USTDA will make disbursements of Grant funds directly to the Contractor only after USTDA approves the Grantee's contract with the Contractor.

(B) Contractor Invoice Requirements

The Grantee should request disbursement of funds by USTDA to the Contractor for performance of the Study by submitting invoices in accordance with the procedures set forth in the USTDA Mandatory Clauses in Annex II.

7. Effective Date

The effective date of this Grant Agreement ("Effective Date") shall be the date of signature by both parties or, if the parties sign on different dates, the date of the last signature.

8. Study Schedule

(A) Study Completion Date

The completion date for the Study, which is December 31, 2011, is the date by which the parties estimate that the Study will have been completed.

(B) Time Limitation on Disbursement of USTDA Grant Funds

Except as USTDA may otherwise agree, (a) no USTDA funds may be disbursed under this Grant Agreement for goods and services which are provided prior to the Effective Date of the Grant Agreement; and (b) all funds made available under the Grant Agreement must be disbursed within four (4) years from the Effective Date of the Grant Agreement.

9. USTDA Mandatory Clauses

All contracts funded under this Grant Agreement shall include the USTDA mandatory clauses set forth in Annex II to this Grant Agreement. All subcontracts funded or partially funded with USTDA Grant funds shall include the USTDA mandatory clauses, except for clauses B(1), G, H, I, and J.

10. Use of U.S. Carriers

(A) Air

Transportation by air of persons or property funded under the Grant Agreement shall be on U.S. flag carriers in accordance with the Fly America Act, 49 U.S.C. 40118, to the extent service by such carriers is available, as provided under applicable U.S. Government regulations.

(B) Marine

Transportation by sea of property funded under the Grant Agreement shall be on U.S. carriers in accordance with U.S. cargo preference law.

11. Nationality, Source and Origin

Except as USTDA may otherwise agree, the following provisions shall govern the delivery of goods and services funded by USTDA under the Grant Agreement: (a) for professional services, the Contractor must be either a U.S. firm or U.S. individual; (b) the Contractor may use U.S. subcontractors without limitation, but the use of subcontractors from Host Country may not exceed twenty percent (20%) of the USTDA Grant amount and may only be used for specific services from the Terms of Reference identified in the subcontract; (c) employees of U.S. Contractor or U.S. subcontractor firms responsible for professional services shall be U.S. citizens or non-U.S. citizens lawfully admitted for permanent residence in the U.S.; (d) goods purchased for performance of the Study and associated delivery services (e.g., international transportation and insurance) must have their nationality, source and origin in the United States; and (e) goods and services incidental to Study support (e.g., local lodging, food, and transportation) in Host Country are not subject to the above restrictions. USTDA will make available further details concerning these provisions upon request.

12. Taxes

USTDA funds provided under the Grant Agreement shall not be used to pay any taxes, tariffs, duties, fees or other levies imposed under laws in effect in Host Country. Neither the Grantee nor the Contractor will seek reimbursement from USTDA for such taxes, tariffs, duties, fees or other levies.

13. Cooperation Between Parties and Follow-Up

The parties will cooperate to assure that the purposes of the Grant Agreement are accomplished. For five (5) years following receipt by USTDA of the Final Report (as defined in Clause 1 of Annex II), the Grantee agrees to respond to any reasonable inquiries from USTDA about the status of the Project.

14. Implementation Letters

To assist the Grantee in the implementation of the Study, USTDA may, from time to time, issue implementation letters that will provide additional information about matters covered by the Grant Agreement. The parties may also use jointly agreed upon implementation letters to confirm and record their mutual understanding of matters covered by the Grant Agreement.

15. Recordkeeping and Audit

The Grantee agrees to maintain books, records, and other documents relating to the Study and the Grant Agreement adequate to demonstrate implementation of its responsibilities under the Grant Agreement, including the selection of contractors, receipt and approval of contract deliverables, and approval or disapproval of contractor invoices for payment by USTDA. Such books, records, and other documents shall be separately maintained for three (3) years after the date of the final disbursement by USTDA. The Grantee shall afford USTDA or its authorized representatives the opportunity at reasonable times to review books, records, and other documents relating to the Study and the Grant Agreement.

16. Representation of Parties

For all purposes relevant to the Grant Agreement, the Government of the United States of America will be represented by the U. S. Ambassador to Host Country or USTDA and Grantee will be represented by the Chief Engineer. The parties hereto may, by written notice, designate additional representatives for all purposes under the Grant Agreement.

17. Addresses of Record for Parties

Any notice, request, document, or other communication submitted by either party to the other under the Grant Agreement shall be in writing or through a wire or electronic medium which produces a tangible record of the transmission, such as a telegram, cable or facsimile, and will be deemed duly given or sent when delivered to such party at the following:

To: V. L. Konstantinov
Chief Engineer
RSE "AISCP"
Umirzag Village
Aktau, Kazakhstan, 466200

Phone: 7 (7292) 51-45-49
Fax: 7 (7292) 44-51-01

To: U.S. Trade and Development Agency
1000 Wilson Boulevard, Suite 1600
Arlington, Virginia 22209-3901
USA

Phone: (703) 875-4357
Fax: (703) 875-4009

All such communications shall be in English, unless the parties otherwise agree in writing. In addition, the Grantee shall provide the Commercial Section of the U.S. Embassy in Host Country with a copy of each communication sent to USTDA.

Any communication relating to this Grant Agreement shall include the following fiscal data:

Appropriation No.: 119/101001
Activity No.: 201081024A
Reservation No.: 2010810027
Grant No.: GH2010810008

18. Termination Clause

Either party may terminate the Grant Agreement by giving the other party thirty (30) days advance written notice. The termination of the Grant Agreement will end any obligations of the parties to provide financial or other resources for the Study, except for payments which they are committed to make pursuant to noncancellable commitments entered into with third parties prior to the written notice of termination.

19. Non-waiver of Rights and Remedies

No delay in exercising any right or remedy accruing to either party in connection with the Grant Agreement shall be construed as a waiver of such right or remedy.

20. U.S. Technology and Equipment

By funding this Study, USTDA seeks to promote the project objectives of the Host Country through the use of U.S. technology, goods, and services. In recognition of this purpose, the Grantee agrees that it will allow U.S. suppliers to compete in the procurement of technology, goods and services needed for Project implementation.

[THE REMAINDER OF THIS PAGE IS INTENTIONALLY LEFT BLANK]

IN WITNESS WHEREOF, the Government of the United States of America and the Republican State Enterprise "Aktau International Sea Commercial Port", each acting through its duly authorized representative, have caused this Agreement to be signed in the English language in their names and delivered as of the day and year written below. In the event that this Grant Agreement is signed in more than one language, the English language version shall govern.

For the Government of the United States of America	**For the Republican State Enterprise "Aktau International Sea Commercial Port"**
By: David B Hunter	By: Konstantinov V.L.
Date: August 31, 2010	Date: 31.08.2010г.
Witnessed:	Witnessed:
By: Matt Meagher	By: Glok A.K. Deputy Director on Economy 31.08.2010

Annex I -- Terms of Reference

Annex II -- USTDA Mandatory Clauses

Annex I

TERMS OF REFERENCE

PURPOSE AND OBJECTIVE

This study is to examine the feasibility of developing a maritime coordination center for the Kazakhstan sector of the Caspian Sea, with the coordination center located in the Port of Aktau, and to develop technical specifications for such a center. The center includes three components: a vessel traffic management system (VTMS), a long-range identification and tracking (LRIT) system, and a search and rescue center (SAR). These specifications are required before these components can be procured. The study comprises the tasks described in these Terms of Reference (TOR).

THE TASKS

Site Survey: The Grantee shall provide the Contractor with necessary site access to perform this site survey In addition, the Grantee may provide a site escort (when applicable) consistent with Grantee responsibilities in Article 4. The Contractor shall conduct a three-week site survey in Aktau. During this time, they shall visit the port and the Grantee's existing facilities to perform Tasks 1 through Task 5, described below. After completing these tasks, the Contractor shall brief the Grantee officials of the initial findings before departing to the USA.

Task 1 - Planning and Information Gathering:

The Contractor shall meet with the Grantee for a kickoff meeting. During this meeting:

1) The agenda for the three-week visit to Aktau shall be discussed and finalized.
2) The Grantee shall prepare in advance and provide the Contractor all documents and data required to perform its study for all three components. These will include:
   - All required site access permits and names of Grantee's escort personnel for the port-facilities visits.
   - Traffic statistics, total number of vessels, movements per year, number of vessels by type, and by cargo.
   - Statistics on and classifications of vessel related incidents.
   - Published charts and notices to mariners.
   - Maps of the entire port and approaches.
   - Reports of previous vessel accidents.
   - Data on installed navigation aids.
   - Organizational charts for the port.
   - Floor plans for candidate locations of the new VTMS, LRIT, and SAR equipment.
   - Electric power data and available capacity to support the new equipment.
   - Previous studies, reports, and proposals to upgrade the VTMS at the port.

Task 2 - Traffic and Navigational Evaluation

The Contractor shall perform the following two subtasks:

Task 2A: Traffic Evaluation

The Contractor shall perform a traffic evaluation for the port of Aktau. This subtask shall include:

1) Evaluation of traffic statistics.
2) Evaluation of incident statistics.
3) Identification of traffic patterns, approach and departure routes, coastal shipping patterns, ocean-going shipping patterns, and variations in traffic volumes over time.

Task 2B: Evaluation of Navigational Conditions

The Contractor shall examine the navigational conditions for the port. This subtask shall include:

1) Identification of existing aids to navigation, buoys - number/type/location.
2) Examination of traffic separation schemes, channels, published charts, notices to mariners.
3) Identification of navigational hazards, *i.e.*, the locations of previous incidents, hazardous areas, restricted areas, submerged pipes, cables, and structures as well as tidal and weather patterns.

Task 3 - Evaluation of Operational Conditions

The Contractor shall evaluate the operational capacities and efficiencies of the port. This task shall include:

1) Examination of the port's operational organization, responsible safety authority, responsible administrative authority, pilot service providers, terminal operations providers, port services providers, principle port customers, and candidate organizations for automation/integration.

2) Identification of operational choke points, determination of vessel-turnaround statistics, identification of the cause of delays in entrance, in exit, and in service provisions (if any), and identification of candidate functions for automation/integration.

3) Evaluation of existing, un-automated information flow, determination of the origin and control point for arrival data, cargo data, and scheduling data, definition of information exchange mechanisms, and identification of candidate functions for automation/integration.

Task 4 - Radar Coverage Survey

The Contractor shall perform a site tour and examine port maps in the port. This task shall include:

1) Review of previous studies, reports, and proposals to upgrade the VTMS.

2) Visiting the port-master area, high-altitude locations within the port, main piers, and navigation channel.

3) Consideration of candidate locations for the radar tower and antenna that would provide full coverage of the inner port. Based on the altitude of each location, the Contractor shall estimate the tower height options that provide full coverage of anchorage areas and approaches outside the port. Tower height shall be determined more accurately after completion of Task 7, when radar coverage is better defined.

Task 5 - Facility Assessment

The Contractor shall visit the existing facilities in the port. This task shall include:

1) Examination of the existing buildings, traffic control space, and electrical power sources.

2) Consideration of candidate locations for the new system equipment, either in existing or new buildings when applicable. Take measurements of all candidate spaces. This information will be needed for the equipment layout, when performing Subtask 8C, below.

The above information will be needed to perform Task 7, Task 10, and Task 13 below.

DELIVERABLE: Task 1 through Task 5

Within 20 days after return to the USA, the Contractor shall prepare a preliminary report for each port, documenting the activities, findings, recommendations, and contacts, as specified in Task 1 through Task 5.

Upon return to the USA, the Contractor shall perform the following tasks:

Task 6 - VTMS Requirements

The Contractor shall include in this task: specifying VTMS requirements, defining required areas of coverage, specifying requirements for automation, determining impact on operational efficiencies, defining functions requiring automation, defining requirements for level of integration, developing recommendations on level of implementation for the port, providing information on U.S. sources for supplying equipment and services, and developing cost estimates for the implementation phase.

The VTMS shall provide a coverage area of 20 nautical miles outside the port of Aktau. The VTMS shall provide monitoring of vessel navigation and receive timely updates to ensure security and safety of navigation. The VTMS shall provide assistance under difficult navigational and weather conditions.

DELIVERABLE - Task 6

The Contractor shall prepare a VTMS requirements document as specified in this task.

Task 7 - Development of VTMS Technical Specifications

Using the VTMS requirements document developed in Task 6, the Contractor shall develop technical specifications according to the following two subtasks:

Subtask 7A - Development of VTS Technical Specification for the port of Aktau

The Contractor shall develop technical specifications for the supply and installation of the VTMS system for the port of Aktau. The VTMS system shall comprise the following components:

1) Shore-based harbor radar subsystem, including all necessary support and accessories for system implementation,
2) Radar image processing equipment,
3) Maritime Very High Frequency (VHF) transceiver equipment,
4) Database management system,
5) Recording equipment, for video, VHF, and telephone communications,
6) All necessary hardware and software,
7) Meteorological monitoring system,
8) Automatic identification system (AIS) for the port operation, tug boats, pilot boats, and vessels in areas of interest at sea, and
9) Three work stations, shared with LRIT and SAR functions.

Subtask 7B - Auxiliary VTMS Technical Specification

The Contractor shall develop auxiliary technical specifications for the supply and installation of the VTMS system for the port of Aktau, including the following:

1) Civil work needed to install the VTMS system listed above,
2) Design of building modifications needed (for a new or an existing building) to accommodate the VTMS system listed above. This shall include: space requirements, equipment layout, workstation drawings, raised flooring and false details (e.g. false or suspended ceilings), air conditioning specifications, and fire alarm and fire extinguisher specifications,
3) Equipment layout of the different system components, including:
    - Network equipment racks
    - VTMS servers
    - AIS equipment
    - Operators' workstations
    - Port control workstations
    - Backup equipment
    - Data storage
    - Network color printers
    - Voice recorders
    - External fiber optic cables
    - Uninterrupted power supply for system equipment
    - Fireproof cabinets
4) Definition of the VTMS system acceptance testing for the port, and

5) Definition of the training requirements for VTMS operators and system administrators.

DELIVERABLE Task 7

The Contractor shall prepare technical specification and coordination center design documents for the VTMS, as specified in the subtasks.

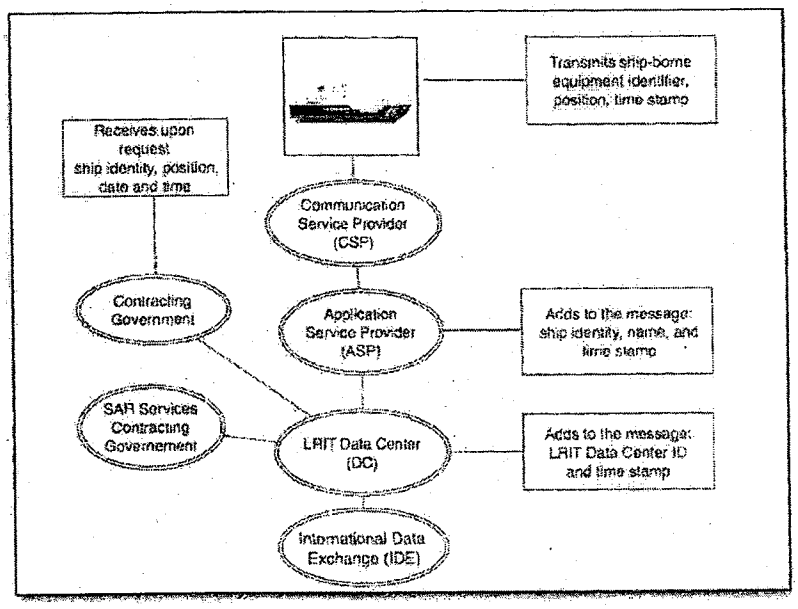
Task 8 - LRIT Requirements

The Contractor shall assist the Grantee to meet its obligations for the LRIT, system including:

1) Complying with International Maritime Organization (IMO) resolution MSC. 202(81), 2006 regarding establishment of the LRIT.
2) Identifying options for implementation, data center location, and facility. Options include developing the data center "in-house," buying the services of a data center, or joining an existing data center.
3) Identifying a point of contact for the system.
4) Verifying whether to contract for or develop the data center.
5) Identifying an application service provider (ASP).
6) Communicating information to the IMO, assisting in applying for issuance of a user name and password for the data distribution plan (DDP), and using the IMO-developed model letter for communication.
7) Identifying an LRIT system covered in any legislation, marine orders, etc.
8) Communicating the approach taken with own-flag vessels. Ensuring own-flag vessels go through equipment testing and obtaining their conformance test report.
9) Identifying system-coordinator costs for the data center, including start up and operational costs.
10) Developing LRIT-system polygon coordinates for state territorial waters.
11) Obtaining user name and password for the LRIT-system area of the Global Integrated Shipping Information System (GISIS).
12) Identifying required data to be entered into the DDP (through GISIS).
13) Setting up a procedure for a port-state-control approach to facilitate inspection of foreign ships for compliance with international conventions and IMO resolution MSC. 202(81), 2006, regarding establishment of LRIT.
14) Supporting the Grantee in deciding whether to purchase reports or use data from its own data center.
15) Ensuring process is in place to charge for or pay for reports through the system.

DELIVERABLE - TASK 8

Upon completion of this task the Contractor shall prepare a requirement document, as specified in this task.



LRIT Flow Diagram

Task 9 - LRIT Assessment

The Contractor shall:

1) Prepare a comparison with other operations (international practices) and make recommendations to apply the latest technology, equipment, and systems.
2) Review level of coordination of operations and efficiency of communication among different organizations, including the Coast Guard, and ship owners.
3) Review the applicability of IMO international standards for LRIT systems normally adopted by modern international maritime organizations of similar size.
4) Specify requirements for automation and impact on operational efficiencies, define functions requiring automation, and define requirements for level of integration of the system within the maritime coordination center.
5) Develop recommendations on the level of implementation within the maritime coordination center in Aktau.
6) Provide information on U.S. sources for supplying equipment and services.
7) Develop cost estimates for the implementation phase.

DELIVERABLE – Task 9

Upon completion of this task the Contractor shall prepare an LRIT system assessment report documenting the reviews and findings of this task.

Task 10 - LRIT System Technical Specifications

Based on the findings of Task 5, Task 8, and Task 9, the Contractor shall develop technical specifications for the supply and installation of an integrated LRIT system. This system shall be an integral part of the new maritime coordination center in Aktau. The system shall include the following components:

1) Workstations
2) Communication equipment
3) Computer servers
4) Voice recording equipment

DELIVERABLE – Task 10

The Contractor shall prepare an LRIT system technical specification document as specified in this task.

Task 11 - SAR Requirement

The Contractor shall assist the Grantee to meet its obligations for SAR, including:

1) Compliance with the requirements of the IMO International Convention on Maritime Search and Rescue, 1979.

2) Compliance with the requirements of International Convention for Safety of Life at Sea (SOLAS) 1974/1988.

3) Compliance with the requirements of the International Management Code for the Safe Operation of Ships and for Pollution Prevention.

4) Compliance with the requirements of International Aeronautical and Maritime Search and Rescue (IAMSAR).

5) Compliance with the requirements of the International Convention on Oil Pollution Preparedness, Response and Co-operation, 1990

6) Compliance with the requirements of the International Convention for the Prevention of Pollution from Ships, 1973 as modified by the Protocol of 1978 (MARPOL 73/78).

7) Providing reliable communications for the entire area of interest, among the maritime coordination center, marine vessels, and rescue services during emergency situations and rescue operations.

8) Recognizing that all telecommunications to and from ships at sea may comprise elements of importance to search and rescue, and supporting proposals for adequate frequency allocations to the maritime mobile service.

9) Ensuring that the SAR communication transceivers comply with the global maritime distress and safety system (GMDSS).

10) Ensuring coordination of emergency and rescue activities with all responsible government organizations and foreign countries regarding actions and flow of information.

11) Compliance with the constitution, laws and decrees of the government of Kazakhstan and international agreements regarding rescue activities and rescue centers.

12) Developing prerequisites for qualified personnel to manage, operate, and maintain the center.

13) Ensuring immediate reporting of search and rescue activities involving personnel in danger or oil/chemical spills.

DELIVERABLE – Task 11

Upon completion of this task the Contractor shall prepare a requirements document, as specified in this task.

Task 12 - SAR Assessment

The Contractor shall:

1) Prepare a comparison with other operations (international practices) and making recommendations to apply the latest technology, equipment, and systems.
2) Review the level of coordination of operations and efficiency of communication among various organizations, including the Coast Guard, and the Port of Aktau.
3) Review the applicability of IMO international standards for SAR normally adopted by modern international maritime organizations of similar size.
4) Specify requirements for automation and the impact on operational efficiencies, define functions requiring automation, and define the requirements for level of integration of the system within the maritime coordination center.
5) Develop recommendations on level of implementation within the maritime coordination center in Aktau.
6) Provide information on U.S. sources for supplying equipment and services.
7) Develop cost estimates for the implementation phase.

DELIVERABLE – Task 12

Upon completion of this task the Contractor shall prepare a SAR assessment report, documenting the reviews and findings of this task.

Task 13 - SAR Technical Specifications

Based on the findings of Task 5, Task 12, and Task 13, the Contractor shall develop technical specifications for the supply and installation of an integrated SAR system. This system shall be an integral part of the new maritime coordination center in Aktau. The system shall include the following components:

1) Workstations hosting VTMS, LRIT, and SAR systems controls and functions.
2) GMDSS Communication equipment for sea area A1 (Ch.70/ 20 – 30 nautical miles) and sea area A2 (2187.5 kHz/180 nautical miles).
3) Computer servers.
4) Voice Recording equipment.

DELIVERABLE – Task 13

The Contractor shall prepare a SAR technical specification document, as specified in this task.

Task 14 – Preliminary Environmental Impact Assessment

The Contractor shall prepare a preliminary environmental impact assessment for the project implementation. This assessment shall include, at a minimum, a preliminary review of the project's impact, with reference to local environmental requirements and those of the potential financing agency. The assessment shall identify potential negative impacts and discuss the extent to which they can be minimized.

DELIVERABLE – Task 14
The Contractor shall prepare a Preliminary Environmental Impact Assessment Report, as specified in this task.

Task 15: Developmental Impact Assessment

The Contractor shall report on the potential development impacts for the project in the host country. While specific focus should be paid to the immediate impact, the Contractor shall include, where appropriate, any additional developmental benefits of the project. The Contractor's analysis of potential benefits shall be as concrete and detailed as possible. The development impact factors are intended to provide the project's decision-makers and interested parties with a broader view of the project's potential effects on the host country. The Contractor shall provide estimates of the project's potential benefits in the following areas:

1) Infrastructure Development: The Contractor shall provide a statement regarding the infrastructure impact giving a brief synopsis.
2) Market-Oriented Reforms: The Contractor shall provide a description of any regulations, laws, or institutional changes that are recommended and the effect they would have if implemented.

3) Human Capacity Building: The Contractor shall address the number and type of positions that would be needed to implement, manage, and operate the proposed project as well as the number of people who will receive training and a brief description of the training program.
4) Technology Transfer and Productivity Enhancement: The Contractor shall provide a description of any advanced technologies that will be implemented as a result of the project. The Contractor shall provide a quantitative description of any efficiency that will be gained.
5) Other: The Contractor shall identify any other developmental benefits of the project, including any spinoff or demonstration effects.

DELIVERABLE – Task 15

The Contractor shall prepare a developmental impact assessment document as specified in this task.

Task 16 - Preparation of tender document

The Contractor shall prepare preliminary tender documents for the recommended system. The documents shall include the following:

1) VTMS Requirement Document
2) VTMS Technical Specifications
3) LRIT System Requirement Document
4) LRIT System Technical Specifications
5) SAR Center Requirements Document
6) SAR Center Technical Specifications

The documents shall include wording to indicate specifically what the responsibilities of the various parties shall be (customer, port authorities, other Kazakhstani agencies, prime vendor, subcontractors, etc.), the quantities of material to be provided for system implementation and expansion requirements, technical performance standards to be achieved in compliance with the latest International Association of Lighthouse Authorities (IALA) recommendations on the implementation of VTS and IMO recommendations and conventions on the implementation of LRIT and SAR systems. In addition, the document shall include specific time schedules for implementation. The documents shall include wording for the bidder to provide recommendations to assist the Grantee in developing an organizational structure of a proposed maritime coordination center. The bidder shall prepare a description of the specific functions, responsibilities, and training and maintenance requirements within the center as well as their staffing levels.

DELIVERABLE – Task 16

The Contractor shall prepare a preliminary tender document as specified in this task.

Task 17: Final Report

The Contractor shall prepare and deliver to the Grantee and USTDA a substantive and comprehensive final report of all work performed under these Terms of Reference. The final report shall be organized according to the Republic of Kazakhstan normative documents *SP RK 1.02-21-2007 "Rules for drafting, review, approval and scope of feasibility studies for construction*," and shall include all deliverables and documents that have been provided to the Grantee. The report shall cover, but not be limited to, the following aspects of the Contractor's work:

1) An introduction: providing the study background, the reasons for undertaking this project, the overall objectives, and describing the scope of work; the study participants, and the study participants' respective roles.
2) An analysis of the required equipment for the maritime coordination center.
3) An implementation plan for the system, including recommended implementation stages with objectives and basic requirements for each stage.
4) A recommended system architecture and site locations for the equipment.
5) Recommended technologies and implementation approaches to support both current needs and future growth.
6) Modular costs of various systems.
7) Estimated training and operational costs.

The final report shall be prepared and delivered to USTDA in accordance with Clause I of Annex II of the grant agreement. The Contractor shall provide the Grantee with six copies of the final report in both English and in Russian on CD-ROM.

Notes:

(1) The Contractor is responsible for compliance with U.S. export licensing requirements, if applicable, in the performance of the Terms of Reference.
(2) The Contractor and the Grantee shall be careful to ensure that the public version of the final report contains no security or confidential information.
(3) The Grantee and USTDA shall have an irrevocable, worldwide, royalty-free, non-exclusive right to use and distribute the final report and all work products that are developed under these Terms of Reference.

Annex II

USTDA Mandatory Contract Clauses

A. USTDA Mandatory Clauses Controlling

The parties to this contract acknowledge that this contract is funded in whole or in part by the U.S. Trade and Development Agency ("USTDA") under the Grant Agreement between the Government of the United States of America acting through USTDA and Republican State Enterprise "Aktau International Sea Commercial Port" ("Client"), dated _____ ("Grant Agreement"). The Client has selected _____ ("Contractor") to perform the feasibility study ("Study") for the Maritime Coordination, Safety, and Vessel Traffic Management System project ("Project") in Kazakhstan ("Host Country"). Notwithstanding any other provisions of this contract, the following USTDA mandatory contract clauses shall govern. All subcontracts entered into by Contractor funded or partially funded with USTDA Grant funds shall include these USTDA mandatory contract clauses, except for clauses B(1), G, H, I, and J. In addition, in the event of any inconsistency between the Grant Agreement and any contract or subcontract thereunder, the Grant Agreement shall be controlling.

B. USTDA as Financier

(1) USTDA Approval of Contract

All contracts funded under the Grant Agreement, and any amendments thereto, including assignments and changes in the Terms of Reference, must be approved by USTDA in writing in order to be effective with respect to the expenditure of USTDA Grant funds. USTDA will not authorize the disbursement of USTDA Grant funds until the contract has been formally approved by USTDA or until the contract conforms to modifications required by USTDA during the contract review process.

(2) USTDA Not a Party to the Contract

It is understood by the parties that USTDA has reserved certain rights such as, but not limited to, the right to approve the terms of this contract and amendments thereto, including assignments, the selection of all contractors, the Terms of Reference, the Final Report, and any and all documents related to any contract funded under the Grant Agreement. The parties hereto further understand and agree that USTDA, in reserving any or all of the foregoing approval rights, has acted solely as a financing entity to assure the proper use of United States Government funds, and that any decision by USTDA to exercise or refrain from exercising these approval rights shall be made as a financier in the course of financing the Study and shall not be construed as making USTDA a party to the contract. The parties hereto understand and agree that USTDA may, from time to time, exercise the foregoing approval rights, or discuss matters related to these rights and the Project with the parties to the contract or any subcontract, jointly or separately, without thereby incurring any responsibility

or liability to such parties. Any approval or failure to approve by USTDA shall not bar the Client or USTDA from asserting any right they might have against the Contractor, or relieve the Contractor of any liability which the Contractor might otherwise have to the Client or USTDA.

C. Nationality, Source and Origin

Except as USTDA may otherwise agree, the following provisions shall govern the delivery of goods and services funded by USTDA under the Grant Agreement: (a) for professional services, the Contractor must be either a U.S. firm or U.S. individual; (b) the Contractor may use U.S. subcontractors without limitation, but the use of subcontractors from Host Country may not exceed twenty percent (20%) of the USTDA Grant amount and may only be used for specific services from the Terms of Reference identified in the subcontract; (c) employees of U.S. Contractor or U.S. subcontractor firms responsible for professional services shall be U.S. citizens or non-U.S. citizens lawfully admitted for permanent residence in the U.S.; (d) goods purchased for performance of the Study and associated delivery services (e.g., international transportation and insurance) must have their nationality, source and origin in the United States; and (e) goods and services incidental to Study support (e.g., local lodging, food, and transportation) in Host Country are not subject to the above restrictions. USTDA will make available further details concerning these provisions upon request.

D. Recordkeeping and Audit

The Contractor and subcontractors funded under the Grant Agreement shall maintain, in accordance with generally accepted accounting procedures, books, records, and other documents, sufficient to reflect properly all transactions under or in connection with the contract. These books, records, and other documents shall clearly identify and track the use and expenditure of USTDA funds, separately from other funding sources. Such books, records, and documents shall be maintained during the contract term and for a period of three (3) years after final disbursement by USTDA. The Contractor and subcontractors shall afford USTDA, or its authorized representatives, the opportunity at reasonable times for inspection and audit of such books, records, and other documentation.

E. U.S. Carriers

(1) Air

Transportation by air of persons or property funded under the Grant Agreement shall be on U.S. flag carriers in accordance with the Fly America Act, 49 U.S.C. 40118, to the extent service by such carriers is available, as provided under applicable U.S. Government regulations.

(2) Marine

Transportation by sea of property funded under the Grant Agreement shall be on U.S. carriers in accordance with U.S. cargo preference law.

F. Workman's Compensation Insurance

The Contractor shall provide adequate Workman's Compensation Insurance coverage for work performed under this Contract.

G. Reporting Requirements

The Contractor shall advise USTDA by letter as to the status of the Project on March 1st annually for a period of two (2) years after completion of the Study. In addition, if at any time the Contractor receives follow-on work from the Client, the Contractor shall so notify USTDA and designate the Contractor's contact point including name, telephone, and fax number. Since this information may be made publicly available by USTDA, any information which is confidential shall be designated as such by the Contractor and provided separately to USTDA. USTDA will maintain the confidentiality of such information in accordance with applicable law.

H. Disbursement Procedures

(1) USTDA Approval of Contract

Disbursement of Grant funds will be made only after USTDA approval of this contract. To make this review in a timely fashion, USTDA must receive from either the Client or the Contractor a photocopy of an English language version of a signed contract or a final negotiated draft version to the attention of the General Counsel's office at USTDA's address listed in Clause M below.

(2) Payment Schedule Requirements

A payment schedule for disbursement of Grant funds to the Contractor shall be included in this Contract. Such payment schedule must conform to the following USTDA requirements: (1) up to twenty percent (20%) of the total USTDA Grant amount may be used as a mobilization payment; (2) all other payments, with the exception of the final payment, shall be based upon contract performance milestones; and (3) the final payment may be no less than fifteen percent (15%) of the total USTDA Grant amount, payable upon receipt by USTDA of an approved Final Report in accordance with the specifications and quantities set forth in Clause I below. Invoicing procedures for all payments are described below.

(3) Contractor Invoice Requirements

USTDA will make all disbursements of USTDA Grant funds directly to the Contractor. The Contractor must provide USTDA with an ACH Vendor Enrollment Form (available from USTDA) with the first invoice. The Client shall request disbursement of funds by USTDA to the Contractor for performance of the contract by submitting the following to USTDA:

(a) Contractor's Invoice

The Contractor's invoice shall include reference to an item listed in the Contract payment schedule, the requested payment amount, and an appropriate certification by the Contractor, as follows:

(i) For a mobilization payment (if any):

"As a condition for this mobilization payment, the Contractor certifies that it will perform all work in accordance with the terms of its Contract with the Client. To the extent that the Contractor does not comply with the terms and conditions of the Contract, including the USTDA mandatory provisions contained therein, it will, upon USTDA's request, make an appropriate refund to USTDA. "

(ii) For contract performance milestone payments:

"The Contractor has performed the work described in this invoice in accordance with the terms of its contract with the Client and is entitled to payment thereunder. To the extent the Contractor has not complied with the terms and conditions of the Contract, including the USTDA mandatory provisions contained therein, it will, upon USTDA's request, make an appropriate refund to USTDA."

(iii) For final payment:

"The Contractor has performed the work described in this invoice in accordance with the terms of its contract with the Client and is entitled to payment thereunder. Specifically, the Contractor has submitted the Final Report to the Client, as required by the Contract, and received the Client's approval of the Final Report. To the extent the Contractor has not complied with the terms and conditions of the Contract, including the USTDA mandatory provisions contained therein, it will, upon USTDA's request, make an appropriate refund to USTDA."

(b) Client's Approval of the Contractor's Invoice

(i) The invoice for a mobilization payment must be approved in writing by the Client.

(ii) For contract performance milestone payments, the following certification by the Client must be provided on the invoice or separately:

"The services for which disbursement is requested by the Contractor have been performed satisfactorily, in accordance with applicable Contract provisions and the terms and conditions of the USTDA Grant Agreement."

(iii) For final payment, the following certification by the Client must be provided on the invoice or separately:

"The services for which disbursement is requested by the Contractor have been performed satisfactorily, in accordance with applicable Contract provisions and terms and conditions of the USTDA Grant Agreement. The Final Report submitted by the Contractor has been reviewed and approved by the Client. "

(c) USTDA Address for Disbursement Requests

Requests for disbursement shall be submitted by courier or mail to the attention of the Finance Department at USTDA's address listed in Clause M below.

(4) Termination

In the event that the Contract is terminated prior to completion, the Contractor will be eligible, subject to USTDA approval, for reasonable and documented costs which have been incurred in performing the Terms of Reference prior to termination, as well as reasonable wind down expenses. Reimbursement for such costs shall not exceed the total amount of undisbursed Grant funds. Likewise, in the event of such termination, USTDA is entitled to receive from the Contractor all USTDA Grant funds previously disbursed to the Contractor (including but not limited to mobilization payments) which exceed the reasonable and documented costs incurred in performing the Terms of Reference prior to termination.

I. USTDA Final Report

(1) Definition

"Final Report" shall mean the Final Report described in the attached Annex I Terms of Reference or, if no such "Final Report" is described therein, "Final Report" shall mean a substantive and comprehensive report of work performed in accordance with the attached Annex I Terms of Reference, including any documents delivered to the Client.

(2) Final Report Submission Requirements

The Contractor shall provide the following to USTDA:

(a) One (1) complete version of the Final Report for USTDA's records. This version shall have been approved by the Client in writing and must be in the English language. It is the responsibility of the Contractor to ensure that confidential information, if any, contained in this version be clearly marked. USTDA will maintain the confidentiality of such information in accordance with applicable law.

and

(b) One (1) copy of the Final Report suitable for public distribution ("Public Version"). The Public Version shall have been approved by the Client in writing and must be in the English language. As this version will be available for public distribution, it must not contain any confidential information. If the report in (a) above contains no confidential information, it may be used as the Public Version. In any event, the Public Version must be informative and contain sufficient Project detail to be useful to prospective equipment and service providers.

and

(c) Two (2) CD-ROMs, each containing a complete copy of the Public Version of the Final Report. The electronic files on the CD-ROMs shall be submitted in a commonly accessible read-only format. As these CD-ROMs will be available for public distribution, they must not contain any confidential information. It is the responsibility of the Contractor to ensure that no confidential information is contained on the CD-ROMs.

The Contractor shall also provide one (1) copy of the Public Version of the Final Report to the Foreign Commercial Service Officer or the Economic Section of the U.S. Embassy in Host Country for informational purposes.

(3) Final Report Presentation

All Final Reports submitted to USTDA must be paginated and include the following:

(a) The front cover of every Final Report shall contain the name of the Client, the name of the Contractor who prepared the report, a report title, USTDA's logo, USTDA's mailing and delivery addresses. If the complete version of the Final Report contains confidential information, the Contractor shall be responsible for labeling the front cover of that version of the Final Report with the term "Confidential Version." The Contractor shall be responsible for labeling the front cover of the Public Version of the Final Report with the term "Public Version." The front cover of every Final Report shall also contain the following disclaimer:

"This report was funded by the U.S. Trade and Development Agency (USTDA), an agency of the U. S. Government. The opinions, findings, conclusions or recommendations expressed in this document are those of the author(s) and do not necessarily represent the official position or policies of

USTDA. USTDA makes no representation about, nor does it accept responsibility for, the accuracy or completeness of the information contained in this report."

(b) The inside front cover of every Final Report shall contain USTDA's logo, USTDA's mailing and delivery addresses, and USTDA's mission statement. Camera-ready copy of USTDA Final Report specifications will be available from USTDA upon request.

(c) The Contractor shall affix to the front of the CD-ROM a label identifying the Host Country, USTDA Activity Number, the name of the Client, the name of the Contractor who prepared the report, a report title, and the following language:

"The Contractor certifies that this CD-ROM contains the Public Version of the Final Report and that all contents are suitable for public distribution."

(d) The Contractor and any subcontractors that perform work pursuant to the Grant Agreement must be clearly identified in the Final Report. Business name, point of contact, address, telephone and fax numbers shall be included for Contractor and each subcontractor.

(e) The Final Report, while aiming at optimum specifications and characteristics for the Project, shall identify the availability of prospective U.S. sources of supply. Business name, point of contact, address, telephone and fax numbers shall be included for each commercial source.

(f) The Final Report shall be accompanied by a letter or other notation by the Client which states that the Client approves the Final Report. A certification by the Client to this effect provided on or with the invoice for final payment will meet this requirement.

J. Modifications

All changes, modifications, assignments or amendments to this contract, including the appendices, shall be made only by written agreement by the parties hereto, subject to written USTDA approval.

K. Study Schedule

(1) Study Completion Date

The completion date for the Study, which is December 31, 2011, is the date by which the parties estimate that the Study will have been completed.

(2) Time Limitation on Disbursement of USTDA Grant Funds

Except as USTDA may otherwise agree, (a) no USTDA funds may be disbursed under this contract for goods and services which are provided prior to the Effective Date of the Grant Agreement; and (b) all funds made available under the Grant Agreement must be disbursed within four (4) years from the Effective Date of the Grant Agreement.

L. Business Practices

The Contractor agrees not to pay, promise to pay, or authorize the payment of any money or anything of value, directly or indirectly, to any person (whether a governmental official or private individual) for the purpose of illegally or improperly inducing anyone to take any action favorable to any party in connection with the Study. The Client agrees not to receive any such payment. The Contractor and the Client agree that each will require that any agent or representative hired to represent them in connection with the Study will comply with this paragraph and all laws which apply to activities and obligations of each party under this Contract, including but not limited to those laws and obligations dealing with improper payments as described above.

M. USTDA Address and Fiscal Data

Any communication with USTDA regarding this Contract shall be sent to the following address and include the fiscal data listed below:

U.S. Trade and Development Agency
1000 Wilson Boulevard, Suite 1600
Arlington, Virginia 22209-3901
USA

Phone: (703) 875-4357
Fax: (703) 875-4009

Fiscal Data:
Appropriation No.: 119/101001
Activity No.: 201081024A
Reservation No.: 2010810027
Grant No.: GH2010810008

N. Definitions

All capitalized terms not otherwise defined herein shall have the meaning set forth in the Grant Agreement.

O. Taxes

USTDA funds provided under the Grant Agreement shall not be used to pay any taxes, tariffs, duties, fees or other levies imposed under laws in effect in Host Country. Neither the Client nor the Contractor will seek reimbursement from USTDA for such taxes, tariffs, duties, fees or other levies.

ANNEX 5

Annex I

TERMS OF REFERENCE

PURPOSE AND OBJECTIVE

This study is to examine the feasibility of developing a maritime coordination center for the Kazakhstan sector of the Caspian Sea, with the coordination center located in the Port of Aktau, and to develop technical specifications for such a center. The center includes three components: a vessel traffic management system (VTMS), a long-range identification and tracking (LRIT) system, and a search and rescue center (SAR). These specifications are required before these components can be procured. The study comprises the tasks described in these Terms of Reference (TOR).

THE TASKS

Site Survey: The Grantee shall provide the Contractor with necessary site access to perform this site survey In addition, the Grantee may provide a site escort (when applicable) consistent with Grantee responsibilities in Article 4. The Contractor shall conduct a three-week site survey in Aktau. During this time, they shall visit the port and the Grantee's existing facilities to perform Tasks 1 through Task 5, described below. After completing these tasks, the Contractor shall brief the Grantee officials of the initial findings before departing to the USA.

Task 1 - Planning and Information Gathering:

The Contractor shall meet with the Grantee for a kickoff meeting. During this meeting:

1) The agenda for the three-week visit to Aktau shall be discussed and finalized.
2) The Grantee shall prepare in advance and provide the Contractor all documents and data required to perform its study for all three components. These will include:
   - All required site access permits and names of Grantee's escort personnel for the port-facilities visits.
   - Traffic statistics, total number of vessels, movements per year, number of vessels by type, and by cargo.
   - Statistics on and classifications of vessel related incidents.
   - Published charts and notices to mariners.
   - Maps of the entire port and approaches.
   - Reports of previous vessel accidents.
   - Data on installed navigation aids.
   - Organizational charts for the port.
   - Floor plans for candidate locations of the new VTMS, LRIT, and SAR equipment.
   - Electric power data and available capacity to support the new equipment.
   - Previous studies, reports, and proposals to upgrade the VTMS at the port.

Task 2 - Traffic and Navigational Evaluation

The Contractor shall perform the following two subtasks:

Task 2A: Traffic Evaluation

The Contractor shall perform a traffic evaluation for the port of Aktau. This subtask shall include:

1) Evaluation of traffic statistics.
2) Evaluation of incident statistics.
3) Identification of traffic patterns, approach and departure routes, coastal shipping patterns, ocean-going shipping patterns, and variations in traffic volumes over time.

Task 2B: Evaluation of Navigational Conditions

The Contractor shall examine the navigational conditions for the port. This subtask shall include:

1) Identification of existing aids to navigation, buoys - number/type/location.
2) Examination of traffic separation schemes, channels, published charts, notices to mariners.
3) Identification of navigational hazards, *i.e.*, the locations of previous incidents, hazardous areas, restricted areas, submerged pipes, cables, and structures as well as tidal and weather patterns.

Task 3 - Evaluation of Operational Conditions

The Contractor shall evaluate the operational capacities and efficiencies of the port. This task shall include:

1) Examination of the port's operational organization, responsible safety authority, responsible administrative authority, pilot service providers, terminal operations providers, port services providers, principle port customers, and candidate organizations for automation/integration.

2) Identification of operational choke points, determination of vessel-turnaround statistics, identification of the cause of delays in entrance, in exit, and in service provisions (if any), and identification of candidate functions for automation/integration.

3) Evaluation of existing, un-automated information flow, determination of the origin and control point for arrival data, cargo data, and scheduling data, definition of information exchange mechanisms, and identification of candidate functions for automation/integration.

Task 4 - Radar Coverage Survey

The Contractor shall perform a site tour and examine port maps in the port. This task shall include:

1) Review of previous studies, reports, and proposals to upgrade the VTMS.

2) Visiting the port-master area, high-altitude locations within the port, main piers, and navigation channel.

3) Consideration of candidate locations for the radar tower and antenna that would provide full coverage of the inner port. Based on the altitude of each location, the Contractor shall estimate the tower height options that provide full coverage of anchorage areas and approaches outside the port. Tower height shall be determined more accurately after completion of Task 7, when radar coverage is better defined.

Task 5 - Facility Assessment

The Contractor shall visit the existing facilities in the port. This task shall include:

1) Examination of the existing buildings, traffic control space, and electrical power sources.

2) Consideration of candidate locations for the new system equipment, either in existing or new buildings when applicable. Take measurements of all candidate spaces. This information will be needed for the equipment layout, when performing Subtask 8C, below.

The above information will be needed to perform Task 7, Task 10, and Task 13 below.

DELIVERABLE: Task 1 through Task 5

Within 20 days after return to the USA, the Contractor shall prepare a preliminary report for each port, documenting the activities, findings, recommendations, and contacts, as specified in Task 1 through Task 5.

Upon return to the USA, the Contractor shall perform the following tasks:

Task 6 - VTMS Requirements

The Contractor shall include in this task: specifying VTMS requirements, defining required areas of coverage, specifying requirements for automation, determining impact on operational efficiencies, defining functions requiring automation, defining requirements for level of integration, developing recommendations on level of implementation for the port, providing information on U.S. sources for supplying equipment and services, and developing cost estimates for the implementation phase.

The VTMS shall provide a coverage area of 20 nautical miles outside the port of Aktau. The VTMS shall provide monitoring of vessel navigation and receive timely updates to ensure security and safety of navigation. The VTMS shall provide assistance under difficult navigational and weather conditions.

DELIVERABLE – Task 6

The Contractor shall prepare a VTMS requirements document as specified in this task.

Task 7 - Development of VTMS Technical Specifications

Using the VTMS requirements document developed in Task 6, the Contractor shall develop technical specifications according to the following two subtasks:

Subtask 7A - Development of VTS Technical Specification for the port of Aktau

The Contractor shall develop technical specifications for the supply and installation of the VTMS system for the port of Aktau. The VTMS system shall comprise the following components:

1) Shore-based harbor radar subsystem, including all necessary support and accessories for system implementation,
2) Radar image processing equipment,
3) Maritime Very High Frequency (VHF) transceiver equipment,
4) Database management system,
5) Recording equipment, for video, VHF, and telephone communications,
6) All necessary hardware and software,
7) Meteorological monitoring system,
8) Automatic identification system (AIS) for the port operation, tug boats, pilot boats, and vessels in areas of interest at sea, and
9) Three work stations, shared with LRIT and SAR functions.

Subtask 7B - Auxiliary VTMS Technical Specification

The Contractor shall develop auxiliary technical specifications for the supply and installation of the VTMS system for the port of Aktau, including the following:

1) Civil work needed to install the VTMS system listed above,
2) Design of building modifications needed (for a new or an existing building) to accommodate the VTMS system listed above. This shall include: space requirements, equipment layout, workstation drawings, raised flooring and false details (e.g. false or suspended ceilings), air conditioning specifications, and fire alarm and fire extinguisher specifications,
3) Equipment layout of the different system components, including:
    - Network equipment racks
    - VTMS servers
    - AIS equipment
    - Operators' workstations
    - Port control workstations
    - Backup equipment
    - Data storage
    - Network color printers
    - Voice recorders
    - External fiber optic cables
    - Uninterrupted power supply for system equipment
    - Fireproof cabinets
4) Definition of the VTMS system acceptance testing for the port, and

5) Definition of the training requirements for VTMS operators and system administrators.

DELIVERABLE Task 7

The Contractor shall prepare technical specification and coordination center design documents for the VTMS, as specified in the subtasks.

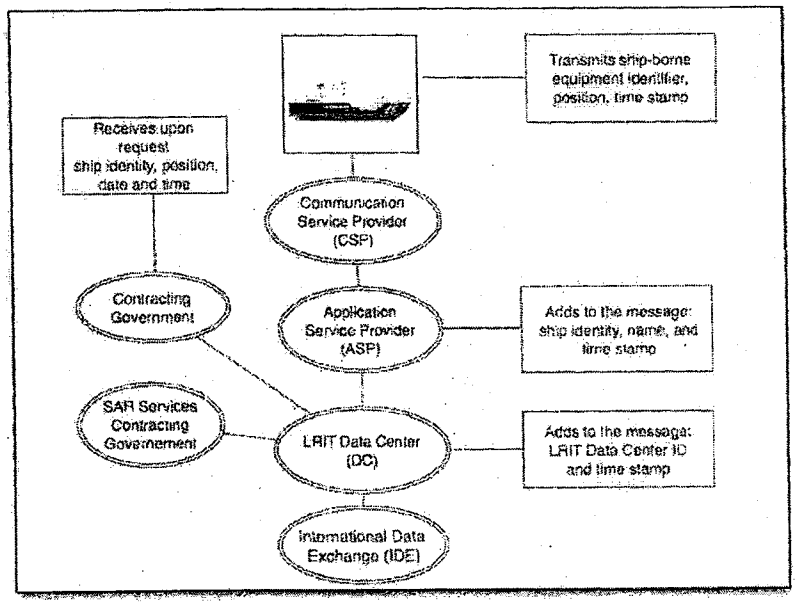
Task 8 - LRIT Requirements

The Contractor shall assist the Grantee to meet its obligations for the LRIT, system including:

1) Complying with International Maritime Organization (IMO) resolution MSC. 202(81), 2006 regarding establishment of the LRIT.
2) Identifying options for implementation, data center location, and facility. Options include developing the data center "in-house," buying the services of a data center, or joining an existing data center.
3) Identifying a point of contact for the system.
4) Verifying whether to contract for or develop the data center.
5) Identifying an application service provider (ASP).
6) Communicating information to the IMO, assisting in applying for issuance of a user name and password for the data distribution plan (DDP), and using the IMO-developed model letter for communication.
7) Identifying an LRIT system covered in any legislation, marine orders, etc.
8) Communicating the approach taken with own-flag vessels. Ensuring own-flag vessels go through equipment testing and obtaining their conformance test report.
9) Identifying system-coordinator costs for the data center, including start up and operational costs.
10) Developing LRIT-system polygon coordinates for state territorial waters.
11) Obtaining user name and password for the LRIT-system area of the Global Integrated Shipping Information System (GISIS).
12) Identifying required data to be entered into the DDP (through GISIS).
13) Setting up a procedure for a port-state-control approach to facilitate inspection of foreign ships for compliance with international conventions and IMO resolution MSC. 202(81), 2006, regarding establishment of LRIT.
14) Supporting the Grantee in deciding whether to purchase reports or use data from its own data center.
15) Ensuring process is in place to charge for or pay for reports through the system.

DELIVERABLE - TASK 8

Upon completion of this task the Contractor shall prepare a requirement document, as specified in this task.



LRIT Flow Diagram

Task 9 - LRIT Assessment

The Contractor shall:

1) Prepare a comparison with other operations (international practices) and make recommendations to apply the latest technology, equipment, and systems.
2) Review level of coordination of operations and efficiency of communication among different organizations, including the Coast Guard, and ship owners.
3) Review the applicability of IMO international standards for LRIT systems normally adopted by modern international maritime organizations of similar size.
4) Specify requirements for automation and impact on operational efficiencies, define functions requiring automation, and define requirements for level of integration of the system within the maritime coordination center.
5) Develop recommendations on the level of implementation within the maritime coordination center in Aktau.
6) Provide information on U.S. sources for supplying equipment and services.
7) Develop cost estimates for the implementation phase.

DELIVERABLE – Task 9

Upon completion of this task the Contractor shall prepare an LRIT system assessment report documenting the reviews and findings of this task.

Task 10 - LRIT System Technical Specifications

Based on the findings of Task 5, Task 8, and Task 9, the Contractor shall develop technical specifications for the supply and installation of an integrated LRIT system. This system shall be an integral part of the new maritime coordination center in Aktau. The system shall include the following components:

1) Workstations
2) Communication equipment
3) Computer servers
4) Voice recording equipment

DELIVERABLE – Task 10

The Contractor shall prepare an LRIT system technical specification document as specified in this task.

Task 11 - SAR Requirement

The Contractor shall assist the Grantee to meet its obligations for SAR, including:

1) Compliance with the requirements of the IMO International Convention on Maritime Search and Rescue, 1979.

2) Compliance with the requirements of International Convention for Safety of Life at Sea (SOLAS) 1974/1988.

3) Compliance with the requirements of the International Management Code for the Safe Operation of Ships and for Pollution Prevention.

4) Compliance with the requirements of International Aeronautical and Maritime Search and Rescue (IAMSAR).

5) Compliance with the requirements of the International Convention on Oil Pollution Preparedness, Response and Co-operation, 1990

6) Compliance with the requirements of the International Convention for the Prevention of Pollution from Ships, 1973 as modified by the Protocol of 1978 (MARPOL 73/78).

7) Providing reliable communications for the entire area of interest, among the maritime coordination center, marine vessels, and rescue services during emergency situations and rescue operations.

8) Recognizing that all telecommunications to and from ships at sea may comprise elements of importance to search and rescue, and supporting proposals for adequate frequency allocations to the maritime mobile service.

9) Ensuring that the SAR communication transceivers comply with the global maritime distress and safety system (GMDSS).

10) Ensuring coordination of emergency and rescue activities with all responsible government organizations and foreign countries regarding actions and flow of information.

11) Compliance with the constitution, laws and decrees of the government of Kazakhstan and international agreements regarding rescue activities and rescue centers.

12) Developing prerequisites for qualified personnel to manage, operate, and maintain the center.

13) Ensuring immediate reporting of search and rescue activities involving personnel in danger or oil/chemical spills.

DELIVERABLE – Task 11

Upon completion of this task the Contractor shall prepare a requirements document, as specified in this task.

Task 12 - SAR Assessment

The Contractor shall:

1) Prepare a comparison with other operations (international practices) and making recommendations to apply the latest technology, equipment, and systems.
2) Review the level of coordination of operations and efficiency of communication among various organizations, including the Coast Guard, and the Port of Aktau.
3) Review the applicability of IMO international standards for SAR normally adopted by modern international maritime organizations of similar size.
4) Specify requirements for automation and the impact on operational efficiencies, define functions requiring automation, and define the requirements for level of integration of the system within the maritime coordination center.
5) Develop recommendations on level of implementation within the maritime coordination center in Aktau.
6) Provide information on U.S. sources for supplying equipment and services.
7) Develop cost estimates for the implementation phase.

DELIVERABLE – Task 12

Upon completion of this task the Contractor shall prepare a SAR assessment report, documenting the reviews and findings of this task.

Task 13 - SAR Technical Specifications

Based on the findings of Task 5, Task 12, and Task 13. the Contractor shall develop technical specifications for the supply and installation of an integrated SAR system. This system shall be an integral part of the new maritime coordination center in Aktau. The system shall include the following components:

1) Workstations hosting VTMS, LRIT, and SAR systems controls and functions.
2) GMDSS Communication equipment for sea area A1 (Ch.70/ 20 – 30 nautical miles) and sea area A2 (2187.5 kHz/180 nautical miles).
3) Computer servers.
4) Voice Recording equipment.

DELIVERABLE – Task 13

The Contractor shall prepare a SAR technical specification document, as specified in this task.

Task 14 – Preliminary Environmental Impact Assessment

The Contractor shall prepare a preliminary environmental impact assessment for the project implementation. This assessment shall include. at a minimum, a preliminary review of the project's impact, with reference to local environmental requirements and those of the potential financing agency. The assessment shall identify potential negative impacts and discuss the extent to which they can be minimized.

DELIVERABLE – Task 14
The Contractor shall prepare a Preliminary Environmental Impact Assessment Report, as specified in this task.

Task 15: Developmental Impact Assessment

The Contractor shall report on the potential development impacts for the project in the host country. While specific focus should be paid to the immediate impact, the Contractor shall include, where appropriate, any additional developmental benefits of the project. The Contractor's analysis of potential benefits shall be as concrete and detailed as possible. The development impact factors are intended to provide the project's decision-makers and interested parties with a broader view of the project's potential effects on the host country. The Contractor shall provide estimates of the project's potential benefits in the following areas:

1) Infrastructure Development: The Contractor shall provide a statement regarding the infrastructure impact giving a brief synopsis.
2) Market-Oriented Reforms: The Contractor shall provide a description of any regulations, laws, or institutional changes that are recommended and the effect they would have if implemented.

3) Human Capacity Building: The Contractor shall address the number and type of positions that would be needed to implement, manage, and operate the proposed project as well as the number of people who will receive training and a brief description of the training program.
4) Technology Transfer and Productivity Enhancement: The Contractor shall provide a description of any advanced technologies that will be implemented as a result of the project. The Contractor shall provide a quantitative description of any efficiency that will be gained.
5) Other: The Contractor shall identify any other developmental benefits of the project, including any spinoff or demonstration effects.

DELIVERABLE – Task 15

The Contractor shall prepare a developmental impact assessment document as specified in this task.

Task 16 - Preparation of tender document

The Contractor shall prepare preliminary tender documents for the recommended system. The documents shall include the following:

1) VTMS Requirement Document
2) VTMS Technical Specifications
3) LRIT System Requirement Document
4) LRIT System Technical Specifications
5) SAR Center Requirements Document
6) SAR Center Technical Specifications

The documents shall include wording to indicate specifically what the responsibilities of the various parties shall be (customer, port authorities, other Kazakhstani agencies, prime vendor, subcontractors, etc.), the quantities of material to be provided for system implementation and expansion requirements, technical performance standards to be achieved in compliance with the latest International Association of Lighthouse Authorities (IALA) recommendations on the implementation of VTS and IMO recommendations and conventions on the implementation of LRIT and SAR systems. In addition, the document shall include specific time schedules for implementation. The documents shall include wording for the bidder to provide recommendations to assist the Grantee in developing an organizational structure of a proposed maritime coordination center. The bidder shall prepare a description of the specific functions, responsibilities, and training and maintenance requirements within the center as well as their staffing levels.

DELIVERABLE – Task 16

The Contractor shall prepare a preliminary tender document as specified in this task.

Task 17: Final Report

The Contractor shall prepare and deliver to the Grantee and USTDA a substantive and comprehensive final report of all work performed under these Terms of Reference. The final report shall be organized according to the Republic of Kazakhstan normative documents *SP RK 1.02-21-2007 "Rules for drafting, review, approval and scope of feasibility studies for construction*," and shall include all deliverables and documents that have been provided to the Grantee. The report shall cover, but not be limited to, the following aspects of the Contractor's work:

1) An introduction: providing the study background, the reasons for undertaking this project, the overall objectives, and describing the scope of work; the study participants, and the study participants' respective roles.
2) An analysis of the required equipment for the maritime coordination center.
3) An implementation plan for the system, including recommended implementation stages with objectives and basic requirements for each stage.
4) A recommended system architecture and site locations for the equipment.
5) Recommended technologies and implementation approaches to support both current needs and future growth.
6) Modular costs of various systems.
7) Estimated training and operational costs.

The final report shall be prepared and delivered to USTDA in accordance with Clause I of Annex II of the grant agreement. The Contractor shall provide the Grantee with six copies of the final report in both English and in Russian on CD-ROM.

Notes:

(1) The Contractor is responsible for compliance with U.S. export licensing requirements, if applicable, in the performance of the Terms of Reference.
(2) The Contractor and the Grantee shall be careful to ensure that the public version of the final report contains no security or confidential information.
(3) The Grantee and USTDA shall have an irrevocable, worldwide, royalty-free, non-exclusive right to use and distribute the final report and all work products that are developed under these Terms of Reference.

ANNEX 6

COMPANY INFORMATION

A. Company Profile

Provide the information listed below relative to the Offeror's firm. If the Offeror is proposing to subcontract some of the proposed work to another firm(s), the information below must be provided for each subcontractor.

1. Name of firm and business address (street address only), including telephone and fax numbers:

2. Year established (include predecessor companies and year(s) established, if appropriate).

3. Type of ownership (e.g. public, private or closely held).

4. If private or closely held company, provide list of shareholders and the percentage of their ownership.

5. List of directors and principal officers (President, Chief Executive Officer, Vice-President(s), Secretary and Treasurer; provide full names including first, middle and last). Please place an asterisk (*) next to the names of those principal officers who will be involved in the Feasibility Study.

6. If Offeror is a subsidiary, indicate if Offeror is a wholly-owned or partially-owned subsidiary. Provide the information requested in items 1 through 5 above for the Offeror's parent(s).

7. Project Manager's name, address, telephone number, e-mail address and fax number .

B. Offeror's Authorized Negotiator

Provide name, title, address, telephone number, e-mail address and fax number of the Offeror's authorized negotiator. The person cited shall be empowered to make binding commitments for the Offeror and its subcontractors, if any.

C. Negotiation Prerequisites

1. Discuss any current or anticipated commitments which may impact the ability of the Offeror or its subcontractors to complete the Feasibility Study as proposed and reflect such impact within the project schedule.

2. Identify any specific information which is needed from the Grantee before commencing contract negotiations.

D. Offeror's Representations

Please provide exceptions and/or explanations in the event that any of the following representations cannot be made:

1. Offeror is a corporation *[insert applicable type of entity if not a corporation]* duly organized, validly existing and in good standing under the laws of the State of _____. The Offeror has all the requisite corporate power and authority to conduct its business as presently conducted, to submit this proposal, and if selected, to execute and deliver a contract to the Grantee for the performance of the Feasibility Study. The Offeror is not debarred, suspended, or to the best of its knowledge or belief, proposed for debarment, or ineligible for the award of contracts by any federal or state governmental agency or authority. The Offeror has included, with this

proposal, a certified copy of its Articles of Incorporation, and a certificate of good standing issued within one month of the date of its proposal by the State of _____.

2. Neither the Offeror nor any of its principal officers have, within the three-year period preceding this RFP, been convicted of or had a civil judgment rendered against them for: commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a federal, state or local government contract or subcontract; violation of federal or state antitrust statutes relating to the submission of offers; or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, tax evasion, violating federal or state criminal tax laws, or receiving stolen property.

3. Neither the Offeror, nor any of its principal officers, is presently indicted for, or otherwise criminally or civilly charged with, commission of any of the offenses enumerated in paragraph 2 above.

4. There are no federal or state tax liens pending against the assets, property or business of the Offeror. The Offeror, has not, within the three-year period preceding this RFP, been notified of any delinquent federal or state taxes in an amount that exceeds $3,000 for which the liability remains unsatisfied. Taxes are considered delinquent if (a) the tax liability has been fully determined, with no pending administrative or judicial appeals; and (b) a taxpayer has failed to pay the tax liability when full payment is due and required.

5. The Offeror has not commenced a voluntary case or other proceeding seeking liquidation, reorganization or other relief with respect to itself or its debts under any bankruptcy, insolvency or other similar law. The Offeror has not had filed against it an involuntary petition under any bankruptcy, insolvency or similar law.

The selected Offeror shall notify the Grantee and USTDA if any of the representations included in its proposal are no longer true and correct at the time of its entry into a contract with the Grantee. USTDA retains the right to request an updated certificate of good standing from the selected Offeror.

Signed: _____
(Authorized Representative)

Print Name: _____

Title: _____

Date: _____